

A NATURALIST AT THE ZOO



E. G. BOULENGER



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A NATURALIST AT THE ZOO



"George", Southern aspect.



Dessert.



In his young days.



... George is not a strict vegetarian.

A. R. Brightwell.

MANDRILL

A NATURALIST AT THE ZOO

BY

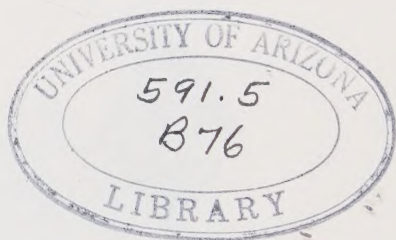
E. G. BOULENGER

Illustrations by
L. R. Brightwell



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INTRODUCTION

ALTHOUGH all the inhabitants of the Regent's Park menagerie are of profound interest to the zoologist, only a limited number appeal with force to the general public. In a walk round the Zoological Gardens it is easy to pick out the chosen few, for whereas the cages or enclosures in which the less popular personalities are housed are often neglected and are almost as spotless at sundown as at closing time, those inhabited by the "stars" are usually littered with discarded offerings and are all day surrounded by a jostling and enthusiastic crowd.

The present volume does not deal exclusively with the better-known inmates of the gardens, but also introduces the reader to a number of less notorious characters, which, owing to their more retiring but none the less interesting habits and recreations, are brought for the first time into the limelight.

E. G. BOULENGER.

1926.

CHAPTER I

THE MAN-LIKE APES

It is generally admitted that in structure and intelligence the apes, which in the Regent's Park menagerie are always represented by a number of chimpanzees, orang-utans and gibbons, and occasionally by a gorilla, differ but slightly from certain inferior races of *homo sapiens*—the flower of creation. As such they should command our fullest sympathy. But though they are more akin to our highly civilized sophisticated selves than any other animal, representing the last milestone left behind us on the road towards perfection, they are often ridiculed and even abused by their more fortunate relations who call on them at the Zoo. The time however will probably come when the inhabitants of a contented war-free, strike-free world will look at the human remains of the twentieth century, and marvel at their comparatively imperfect development.

The apes enjoy a man-like structure which is

specially remarkable in the young animal, where the strong ridges of the forehead which characterize all the adult specimens, with the exception of the gibbon, are only feebly developed. One of the most obvious differences between the apes and man lies in the much greater length of the arms of the former compared with that of their legs, upon which they are capable of supporting themselves in a more or less upright position. The apes' feet are as subtle as their hands and are capable of acting as grasping organs, as are, as a matter of fact, those of the newly-born human.

The chimpanzee, an inhabitant of the forests of Central and West Africa, is characterized by its very large ears, its comparatively pale skin, its well-defined eyebrows, and its long black hair which is disposed in great profusion round the face.

Of late years great strides have been made in the study of the chimpanzee's habits and mental equipment in captivity, yet little is still known of its life in the wild state. According to the few reliable authorities who have visited the "chimp" at home, he elects to live in small family parties, hovering twixt tree-top and the ground by day, sleeping aloft at night. At sunrise and sunset he sings his matins and even-song, which may be described as a series of hoots and unearthly howls. The chimpanzee is a

bundle of contradictions, for this nervous, highly-strung creature, which elects to live a more or less nomadic tree-top existence, quickly acquires under sympathetic tutoring better manners than are often to be observed in a West-end restaurant, and is far more responsive to the demands of civilization than are certain tribes of savages that disport themselves to this day on the banks of the Amazon River. As a babe or growing youngster he is a charming companion, but as he grows up he becomes not only savage and morose but with advancing years less and less intelligent. In the development of their brain chimpanzees vary individually to a very great extent—like the members of the human race, from which they differ in that their reasoning powers are at their highest development at the age of about seven years, just prior to attaining maturity.

Several of the Zoo chimpanzees have distinguished themselves from the intellectual standpoint. Arthur, a native of the French Congo, understood many words even when spoken by complete strangers, and he would immediately recognize his friends amongst the crowd of visitors that thronged round his enclosure. He had been taught to feed from a plate with a spoon and fork, and to pick out the key of his cage from a bunch containing a large number. He would dress himself, an accomplishment which

however, did not require teaching. One winter's day his keeper, thinking he might possibly be feeling the cold, threw into his cage a pair of old overalls, expecting the ape merely to cover himself. Arthur, however, immediately seized hold of the apparel and put it on in the orthodox fashion. After that he was given a large assortment of clothes to wear, which he always put on without assistance.

Micky, who lived for twenty-five years (1898-1923) in the Zoo, where he arrived at the age of two, was a great character. Although amiable when quite young he soon developed a temper. He was specially cantankerous on bank holidays when a policeman was posted inside his house to control the crowds. At the sight of a member of the "force" Micky would howl with rage, his dislike for the "man in blue" being due to the fact that on a certain bank holiday, when he was still quite an infant, a policeman on point duty passed the time of day making grimaces and shaking a truncheon at his poor relation. For years after this he would express his hatred and contempt for any representative of law and order that entered his house by shrieking, and spitting at the glass pane which separated his cage from the public thoroughfare. Micky allowed the grievance to prey upon his mind, and with advancing years he would even show marked signs of displeasure at the sight of any



'Fed-up'



Alarmed



'Sulks'



'Peeved'



A brain storm



'Closing down'



...yours affectionately...

I. A. Brightwell

CHIMPANZEE STUDIES

uniformed person, and it was not until the winter of 1914 when large numbers of military visitors, in every conceivable type of uniform, passed through his house, that the insult inflicted upon him so long ago was entirely forgotten.

A chimpanzee remarkable for its intelligence was one named "Consul" who many years ago performed at the London Hippodrome. Of his public performance the most interesting feature was the skill with which he rode a bicycle, the steering of which around tables and chairs, on a comparatively small stage, implied a degree of mental adjustment with which even the apes are not usually credited. One night, when performing in Paris, Consul introduced on his own initiative a number of additions into his "turn" in imitation of a comedian who had entertained him the previous afternoon at the Folies Bergères.

Equal in intelligence to the chimpanzee is the gorilla of West Africa, a more powerful and bulky animal, which attains a height of $5\frac{1}{2}$ ft., and a weight of 35 stone. With the former ape it agrees in the black colour of its hair and the presence of eyebrows on the forehead, but differs in its longer and stronger arms, its thicker neck, its longer nose, its shorter upper lip, and its smaller ears.

The gorilla does not thrive in confinement unless treated exactly like a human being, and

the few specimens that have from time to time been exhibited in zoological gardens have, with one or two exceptions, been morose and unresponsive and have only survived a few months of captivity. In 1918 a young gorilla called John came into the possession of Miss Alyse Cunningham who kept it in her flat in Sloane Street where it was treated as one of the family. Consequently it lived for many years a contented and civilized life. Another gorilla acquired by the same lady five years later and kept under similar conditions died only quite recently. One reason for the good health of these gorillas is to be found in the fact that they were both acclimatized to the normal temperature of a dwelling-house and were taken for walks and drives in practically all weathers. Also that they were never left alone except at night. They washed themselves every morning in tepid water, and were taught to be clean in every respect. They would of their own accord go to the bathroom, and at night would get out of bed and return after re-arranging their bedclothes, without appealing for assistance. John was specially well-known to Londoners, as he loved to hang out of the fourth-floor window of his flat and amuse passers by with his antics. When excited, as he always was when he saw anything that specially entertained him going on in the street below, such as soldiers marching by, he would stand up on his

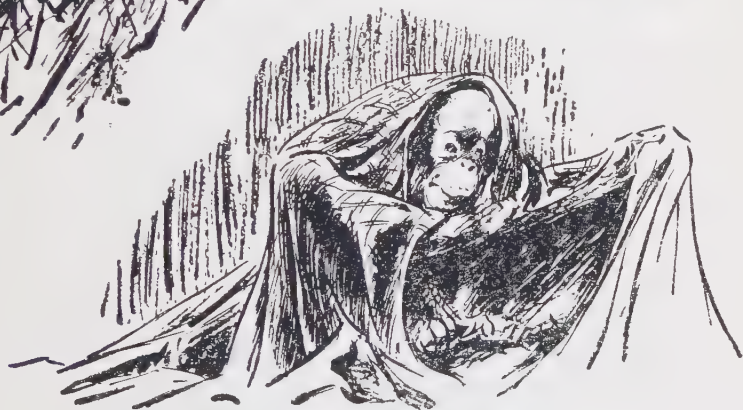
window-sill and beat his chest alternately with either hand at a terrific rate, a habit peculiar to gorillas, and first described by the naturalist-explorer Du Chaillu ; of the many intelligent actions performed by this gorilla, the most remarkable was on an occasion when Miss Cunningham who was dressed for a garden party in a light frock refused to take him on her lap to be nursed. After rolling about on the floor and crying for a few minutes, John got up and fetched a newspaper which he very carefully spread out on the lap of his mistress before attempting to climb up. One or other of Miss Cunningham's gorillas have for some years been exhibited during the summer months at the Zoological Gardens in a large cage which they share with human playmates. They come to the gardens for the day, travelling to and from their home in a taxi-cab.

The Orang-utan—a name of native origin meaning “ wild man of the woods ”—makes his home in the forests of the swampy lowlands of Borneo and Sumatra, where his exceptionally long and powerful arms enable him to climb the highest trees, and to form the so-called nests or platform shelters under which he sleeps at night. The face of the orang has a somewhat bluish tint, and is provided with a very small flat nose whilst the ridges over the eyes are less developed than in the chimpanzee and gorilla. The fore-

head is much elevated and the ears, which are very small, are very human in shape. The cheeks of the adult male are surrounded by a pair of enormous flaps of skin, whilst the throat forms pouches communicating with the creature's larynx which become inflated with air at more or less regular intervals. The orang, although a sluggish creature with none of the nervous vivacity of the chimpanzee, is always the most popular exhibit in any zoological gardens as he is invariably the greatest laughter-maker in the menagerie. Murphy, a half-grown specimen that lives in an outdoor enclosure communicating with a small, slightly warmed cage, is the recognized buffoon of the London Zoo, his antics such as standing on his head, turning somersaults, wearing paper bags on his head, and using the dangling rope-ladder in his cage as a sort of hammock, causing great hilarity. On bank holidays he is always the recipient of many gifts, edible and otherwise, which early in the day are much appreciated, but which later, when he is slightly bored with his many admirers, and his appetite has been satisfied, are rudely thrown back at his would-be benefactors. On one occasion he was observed to accept a vessel containing an ice-cream, which he proceeded to pour over his head, consuming with obvious enjoyment the melted parts which slowly trickled over the regions of his mouth. He once appro-



In Borneo.



In Regent's Park.

ORANG-UTAN

priated a pair of gloves and wore them for the greater part of the day. Murphy was allowed out in his enclosure one day last winter after a heavy snowstorm. He was delighted with the snow, which he picked up in large handfuls and, after tasting it, threw at the visitors outside his cage.

Some years ago on a foggy winter's evening Jacob, a splendid full-grown orang-utan, exhibiting the enormous cheek flaps and throat pouches which characterize the adult male, broke out of the old Ape House and climbed a neighbouring tree, where, answering his forest instincts, he built a nest platform of boughs and twigs and settled down for the night. Some keepers who were out ratting heard a noise in the neighbourhood of his house and soon ascertained that the giant ape had broken loose. It was found that the animal had made a large hole in the strong wire-work of his cage, squeezed himself through it, and then climbed to the roof of the house, where, with a flower-pot appropriated from the window-sill of the service corridor, he broke a way out through a skylight. The fog and darkness made it difficult to attempt to recapture him before the morning, so a number of men armed with rifles, ropes, nets, and provided with flares, kept an all-night vigil. A successful offensive was undertaken at dawn, when a fire-extinguisher was brought into action and the

NATURALIST AT THE ZOO

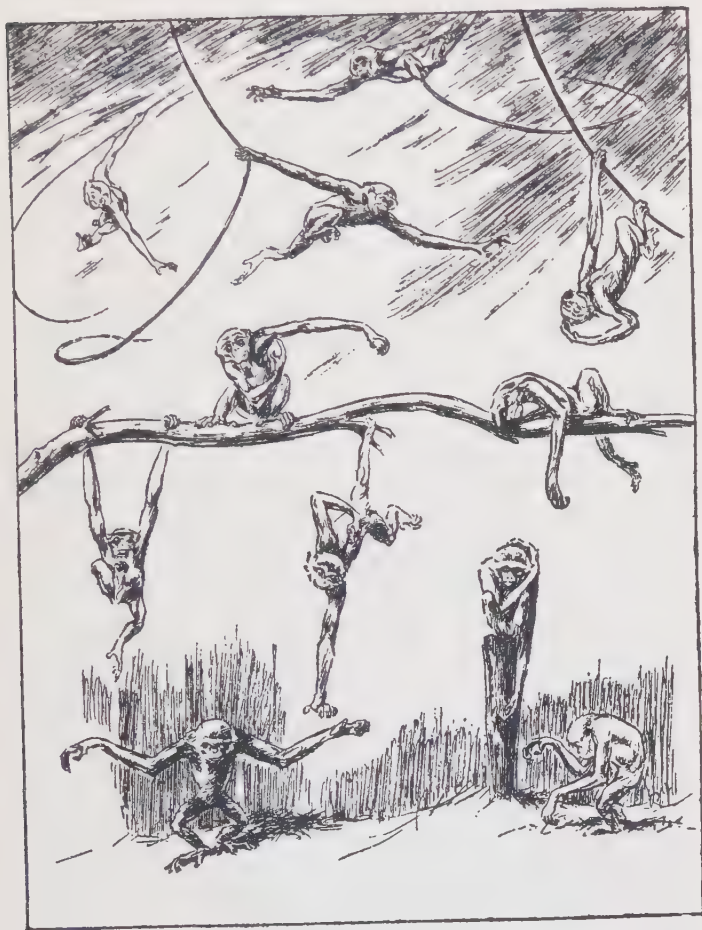
turned to his cage through the hole he made in the roof.

Interesting account of the popular orang-utan, Mollie, which lived for many years in the Melbourne Zoo, has been given by Mrs. A. Osborn. Brought to Australia when only a few months old, this ape lived in a cage in the gardens for over twenty years. The manner in which Mollie prepared for her night's rest was an object-lesson in the art of bed-making. A number of bags were spread out on the floor of the cage, every suspicion of a wrinkle being smoothed out. More bags were then rolled up into a bundle, and placed at the head of the bed to form a pillow ; finally she wrapped herself up in a rug, and stretched herself out in preparation for a night's sleep. She was very vain and like most children delighted in dressing up. An umbrella gave her special pleasure, and she was constantly on the look-out for an opportunity to snatch one from the unsuspecting visitor. On attaining her objective she prepared an elaborate arm-chair made out of the bags and rugs provided for her bed, and on it reclined at her ease for hours under the open umbrella. The Melbourne Zoo authorities had no objection to the ape occasionally indulging in a cigarette, which, provided the brand was an expensive one, was much enjoyed. " Gaspers " were indignantly thrown away after the first few puffs. Mollie

lighted the cigarette herself, this accomplishment necessitating the lining of her cage with iron, in order to render it fire-proof. On one occasion this remarkable ape succeeded in picking the lock of her cage and escaping into the gardens. The public were much alarmed, but not more so than Mollie for as soon as the overseer appeared on the scene she immediately rushed towards him for protection and allowed herself to be led back to her cage.

The least intelligent of the apes are the acrobatic gibbons of the forest regions of South-eastern Asia, of which there are about twenty different species. They may be distinguished from the other members of the primate order by their much smaller size, their more delicately shaped bodies, and the extraordinary length of their slender arms. The largest living gibbon attains a height of 3 feet, but the majority seldom exceed 20 inches. Although less man-like in appearance than the chimpanzee, the gorilla, or the orang-utan, the skull of the gibbon approaches the human type more closely than that of any other animal. In captivity these thoroughly arboreal creatures can only be observed to advantage when kept in enclosures sufficiently large to allow them to give an unrestricted display of their amazing agility. When on the ground the gibbon invariably walks in an upright position, its long arms being usually bent and held dangling

at an angle just below the level of its head. The most active member of the family is the common Agile Gibbon, which when swinging from bough to bough is capable of clearing forty feet at a single leap, and has frequently been observed to capture birds on the wing. The Siamang, which is specially remarkable in its possession of a throat-sac that can be inflated at will, is the largest and least acrobatic of the gibbons. It has the power of producing the most piercing howls, which can be heard on a quiet night at considerable distances. Nothing can be more suggestive of lurid murder in progress than the night song of the Siamang, and on one occasion a Zoo specimen inspired the policeman on his beat outside the gardens with glowing visions of promotion—fortunately unfulfilled.



GIBBON ACROBATICS

CHAPTER II

THE BABOONS

BABOONS are characterized by their long dog-faced snouts. They are confined to Africa and Arabia, and apart from the man-like apes are the largest members of the monkey tribe. The most powerful baboon is the stump-tailed mandrill of West Africa, who is provided with teeth worthy of a tiger, and a temper to match. The adult creature is gorgeously coloured, its face consisting principally of a vivid scarlet snout, garnished on either side by a fluted cheek of the brightest azure blue. A description of its back-view may perhaps be best effected by remarking that short-sighted visitors are on occasions in some doubt as to just which end of the baboon is the facial portion. In his guileless youth the face and tail-end of the mandrill are black, and it is only when adolescence descends upon him that these parts flush with the glories of a Turner sunset.

Mandrills move about in large colonies, and persuade most other animals, including the lion,

to give them the road. These colonies have been known to wage war upon native troops and to have successfully defied the opposition, not merely by attacking in mass formation but by rolling rocks and boulders down upon the enemy. George, the Zoo favourite, has a few friends who are allowed to caress him, but for most members of the human race he has the most profound contempt and dislike, and his long incisor teeth are perpetually set in a murderous snarl, even when accepting the most appetizing of dainties from his admirers. He is fed mainly on a fruitarian diet, but he also relishes mice and sparrows, two unofficial exhibits in the gardens, which have now learnt to avoid his cage. In his native haunts the mandrill does much damage to plantations, and this tendency to be a public nuisance is apt to lead to his ultimate extermination. In the meantime he forms an arresting and entertaining exhibit in any zoo, where he rivals the showiest of colour schemes in the tropical aviaries or aquaria.

The Chacma or Pig-tailed Baboon, an inhabitant of East Africa, is a commoner but less striking form, being more or less uniform dark grey in colour. It is represented in most zoological gardens and even travelling menageries, being the best tempered of all the baboons. It makes a popular exhibit owing to its humorous, if not always engaging, manners. The way in which

a specimen ended its existence in the Melbourne Zoo is worth recording. The baboon was not kept in a cage, but was chained to a pole about twelve feet high, which was surmounted by a small platform and fixed in the open. The chain, attached to a collar round the monkey's neck was long enough to enable the animal to climb up and down the pole. Now this baboon loved to "show off" and therefore in order to concentrate the attention of the public upon himself would turn somersaults, and perform various acrobatic feats. Having collected a large crowd he would climb the pole on to the little platform, and then, holding the chain in one hand about six feet from the collar, would proceed to jump into space, coming down dangling at the end of the chain. There he would hang absolutely still and rigid, with legs stretched out, simulating death. But all the time one hand was holding on to the chain just below the collar, thus preventing strangulation. This act never failed to horrify spectators, who when seeing this performance for the first time, were genuinely deceived and would give utterance to screams of dismay to the huge delight of the performer of this simian "grand guignol." When the monkey thought he had created a sufficient sensation he would suddenly come to life and wave his chain triumphantly in the air. One unfortunate day, whilst enacting this trick his hand slipped from

the collar, and it was a really dead baboon that swung to and fro from the end of the chain.

An hour spent leaning on the parapet of the forty foot high Monkey Hill in Regent's Park, which with its pinnacles, plateaus, precipices, caves, and drinking pools reproduces a corner of baboon-land somewhere in Arabia, will reveal the home-life of the Sacred Baboon, an inhabitant not only of Arabia but also of Abyssinia and the Soudan. The face and hind-quarters of this very typical baboon which with its stubby hands and feet is better adapted for scrambling on rocks than climbing trees, lack the prismatic hues of its relative the mandrill, being tinted a uniform pink or scarlet. The males are characterized by their huge square-cut manes or capes of long coarse hair, covering the neck and shoulders.

The Sacred Baboon is easily the most dignified and impressive member of the baboon family, and centuries before the Christian era was worshipped by the ancient Egyptians. In certain old Egyptian cities thousands of baboon mummies have been unearthed recently, the mummified animals all exhibiting the characteristic resting pose—seated, with the hands placed upon the knees. This stately monkey figures largely in mural paintings, and on monuments, which all bear witness to the fact that his early masters, more successful than the modern trainer, taught

the creature to play the useful rôles of watchdog and fruit-gatherer.

The ninety-odd tenants of the zoo's Monkey Hill include sacred baboons of both sexes, and all ages, from venerable tribal leaders to mere "toddlers," who may be observed riding "jockey-fashion" on the backs of their elders. As with most baboons the family motto appears to be "united we stand," the inhabitants of the "hill" eating, sleeping, playing, and giving battle always in mass formation. Although a formidable crowd they are on fairly good terms with their keepers, who go among them armed with nothing more deadly than a stable broom. This great assemblage of baboons in all probability marks the largest "round up" of such animals since the days when they were requisitioned for the Roman arenas to act as gladiators. Their captors organized the construction of some scores of huts with trap-doors, skilfully camouflaged with bushes. The huts were baited with a variety of food, and the baboons once inside were detained by the sudden pulling of a cord, whereby the hunter stationed at some distance suddenly dropped the door. The baboons were then lured into cages, and these in turn loaded on the backs of camels. Some days' trek across the desert to the rail-head, a long train-journey, a sea-voyage, and a lorry ride, eventually came to an end at Regent's Park. Kind treatment,



LIFE ON THE MONKEY HILL

good food, warmth, and artificial sunlight on dull days, soon reconciled the baboons to the Zoo's copy of Arabia in somewhat restricted form, and to-day not even the rigours of an English winter can damp the buoyant spirits and tireless energy of this unique colony.

CHAPTER III

MONKEYS

MONKEYS present an endless array of structure and adornment. Some are ornamental, others are hideous. Although most are intelligent, a few are stupid. There are silent monkeys, chattering monkeys, and howling monkeys. They may have exceedingly long tails, which in the American forms are prehensile and act as a fifth hand, or they may have no tails at all. Many of the Old World monkeys have cheek-pouches formed by folds in the skin, which may act as receptacles for the storage of food, but when empty lie flat on either side of the face. The limbs of ordinary monkeys vary greatly as to length, but the arms are never longer than the legs as in the man-like apes. Members of the greater number of the several hundred species known have at one time or other been inmates of the Regent's Park monkey-house.

In recent years the monkeys at the Zoo have greatly improved in health as a result of their being given access to the open air all the year

round. In the old days the conditions of housing of our poor relations were determined solely by considerations of temperature. This was changed when Dr. Chalmers Mitchell, the present secretary of the Zoological Society, was able to show from the records of longevity of the monkeys and other animals, that had inhabited the gardens over a prolonged period, that the life of those kept in heated houses at a uniform temperature was shorter than in the case of those exposed to fresh air, and a varying temperature. In the future the Zoo monkeys will not only have access to the open in winter as well as summer, but their indoor apartments will be furnished with sunlight lamps transmitting the ultra-violet rays which in recent years have been proved to be of such benefit to sickly and rickety children.

The commonest form of monkey seen in captivity is the organ-grinder's monkey—the Rhesus Macaque of India, and at one time over a hundred of these comic creatures were exhibited in the huge outdoor cage opposite the elephant house, where they presented a spectacle of riotous high spirits, especially in the summer time, when they were to be observed swimming, splashing and pushing one another into the water of the pond in their enclosure. Certain natural history books say that monkeys cannot swim; but a visit to the Zoo during a heat-wave

would soon convince the authors of such statements to the contrary.

Gifts of rhesus macaques are continually being offered to the Zoo, but are seldom accepted. These monkeys are affectionate enough when young; but even then they have a way of making life a little too full of incident, with the result that their owners, after keeping them only a few days, are on their bended knees before the Zoo authorities, begging them to relieve them of their newly-acquired pets. One large specimen who had smashed a kitchen full of crockery, turned on all the taps of the gas cooker, and then bitten its owner, escaped into Regent's Park from the cab in which he was being brought to the Zoo. There he took up his abode in a tree, and defied all efforts to capture him for over a week.

Another macaque usually in evidence in Regent's Park is the so-called Barbary Ape of Gibraltar, a monkey which from its peculiar association with man is in certain ways one of the most interesting beasts that ever ran on all fours. The exact origin of the creature is uncertain. Some authorities declare that he was imported from North Africa, whilst others are equally certain that he is indigenous. Since the British occupation of the Rock these monkeys have been more or less under army discipline. For years a fairly exact census of the monkey

population was kept, and at times when the animals became too assertive, direct action was taken.

The welfare of the monkey community is not neglected, and visitors to the Zoo some years ago may remember a peculiarly large and ferocious old male who had been banished from the Rock by the military authorities. This unlovable veteran was a kind of simian Landru, for he had developed in his crabbed old age a horrible penchant for murdering females of his own kind, and nearly succeeded in wiping out the monkey populace, which for so long had been a merry feature of the gateway to the East.

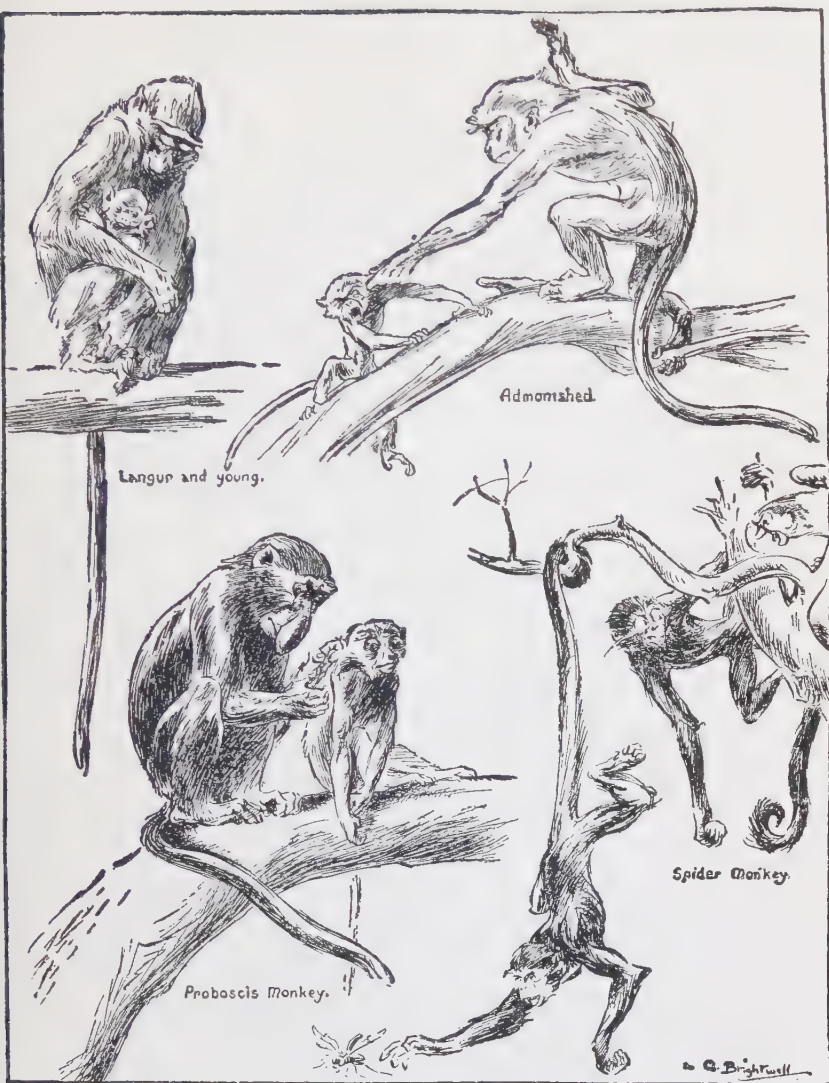
The big, slender, long-limbed, long-tailed, silver-coated Sacred Langur of Northern India is one of the most handsome, liveliest and most mischievous of all the members of the monkey tribe. A number were some years ago sent to many of the European menageries at the special request of the native worshippers, for even the devout Hindu found this animal too great a trial to endure any longer. In the monkey-temple of the city of Benares, where the langurs reigned supreme, undaunted by the deafening music of gongs and horns, they haunted every corner of the sacred edifice. Not contented with fouling the floors and vestments they extended their activities to the surrounding streets, where

c

no true believer dared to dispute their right to rifle shops, raise their families in private dwellings, and impose every kind of indignity upon the populace at large. At last, tired of having their turbans snatched from their heads and their noses pulled, the priests and dignitaries appealed to the British Government, and with thankfulness saw some thousands of these pampered and revered animals caught, caged, and removed to other spheres, where their peculiar brand of humour would be more appreciated.

In 1912 a young Capped Langur, so-called from the raised crown of hair on its head, was born in the gardens. The newly-born monkey's head, which was so enormous as to suggest water on the brain, was quite bald and the colour of its face differed from that of its parents in being flesh-coloured and not black. It was not until it was over two months old that the hair on the head began to grow and that the face assumed the dark complexion of its parents. In the following year the mother of this youngster produced another offspring, and her affections were naturally transferred from the first-born to the new arrival, much to the disgust of the former, whose displeasure was expressed so actively as to necessitate its removal to separate quarters.

The Holy Langurs of Asia are replaced in Africa by their allied, and even more striking,



MONKEY STUDIES

relatives the guereza and king monkeys. These, like the American spider-monkeys, are more or less without thumbs, which are represented by mere knobs, or tubercles. The thumb it is supposed gradually atrophied from disuse, these creatures employing their hands as mere hooks or grappling irons. The lack of this digit has one drawback from the monkey's point of view, for the guerezas and king monkeys are unable to join their thumbed relatives in the favourite sport of "beating the home coverts." It may be explained that monkeys, like most animals, are passionately fond of salt, and it is the saline particles which clog their fur, and not vermin, that is the reason for that ceaseless search of their own and neighbour's coats. The guerezas and king monkeys are covered with long hair, which hangs down on the sides of the body forming a mantle. They are seldom exhibited in captivity, although their fur which is in great demand, is unfortunately seen only too often in the west-end of London.

The Long-nosed or Proboscis monkey is an amazing creature, which is very rare in menageries, outside Borneo its native land. It is a large slender animal, the person of the male being entirely dominated by his nasal appendage, in comparison to which that of Cyrano de Bergerac was to be regarded as a mere button.

A large number of guenon monkeys from

Africa are always on exhibition in the Zoo. They present a great variety of colouring. One species is distinguished by a terrific ginger moustache, whilst another has a little nose of glaring whiteness, set in the middle of a coal-black face. They are all comparatively small and slender, and not very distantly related to the langurs.

The common Green monkey like the rhesus macaque is occasionally seen marooned on a hurdy-gurdy. The Mona and Diana monkeys are two handsome black and white forms, the latter carrying off the prize for beauty by virtue of a sweeping beard. Those that have been kept as pets in this country sooner or later find their way to the Zoo, as a result of their encounters with neighbours, local tradesmen, and the law.

There are few more entertaining creatures to be seen at the Zoo than the very active American Spider monkeys. They are essentially adapted to an arboreal life, as their long tails are capable of being used as grasping organs and are sufficiently strong to enable the animals to hang from the branches of trees without the aid of their extremely long and slender limbs. As a result of constant use as a "fifth hand" the under surface of the tail has become quite hairless.

The Spider monkeys at the Zoo are gentle inoffensive souls, rather sensitive to cold. Unlike

most of the monkeys previously referred to they make charming pets for those who can afford to provide them with a sufficiently luxurious environment. From all accounts they are, however, less docile in their native South American jungles, where huge troops swing through the tree tops, ravaging birds' nests and pillaging the hives of bees and wasps.

Closely allied to the Spider monkey is the little Capuchin, who has been described as looking like a little old man seen through the wrong end of a telescope. From cradle to grave he wears a benign though care-worn expression, which consorts strangely with his clownish caricaturing of a light-hearted human being. He is not amongst the least intelligent of monkeys, as was clearly demonstrated some years ago by a specimen which during an illness had been given a little brandy each morning. On his recovery his brandy ration was naturally discontinued, which so upset the little animal that for days he would attempt to arouse the pity of his keeper, rolling about as if in pain, accompanying his action with heart-rending moans. Like most monkeys he is very fond of insects. The Zoo insects are exhibited in the same building as certain small monkeys, and at one time several big cases in the house were occupied by thousands of stick insects. The insects bred apace and the young ones, escaping through the perforated

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zinc covers of their cases, permeated every corner of the building. They swarmed up the wire-fronted cages containing the Capuchins, where the solemn little monkeys would sit for hours on end picking the stick insects from the wires and eating them. As a result when supper time came they showed none of the usual enthusiasm for their official rations.

No creature can be more entertaining or affectionate than the somewhat bulky, nigger-faced Woolly monkey of Brazil, which takes its name from its woolly coat. Unfortunately his extreme affability excites certain visitors to mistaken generosity, and on a crowded day he is liable to receive a multitude of gifts highly detrimental to his well-being, such as pen-knives, sharp-edged pocket mirrors, reels of cotton, tobacco, etc. At the Zoo he is sometimes "chummed in" with such cage mates as wombats, guinea pigs, armadillos, and squirrels, and if at any time there is a little friction it is never the fault of the woolly monkey. The tails of these creatures are even longer than those of the spider monkeys, and form grasping organs of such a perfect kind that they may sometimes be observed accepting gifts and transferring them to their mouths by means of their highly specialized caudal appendages.

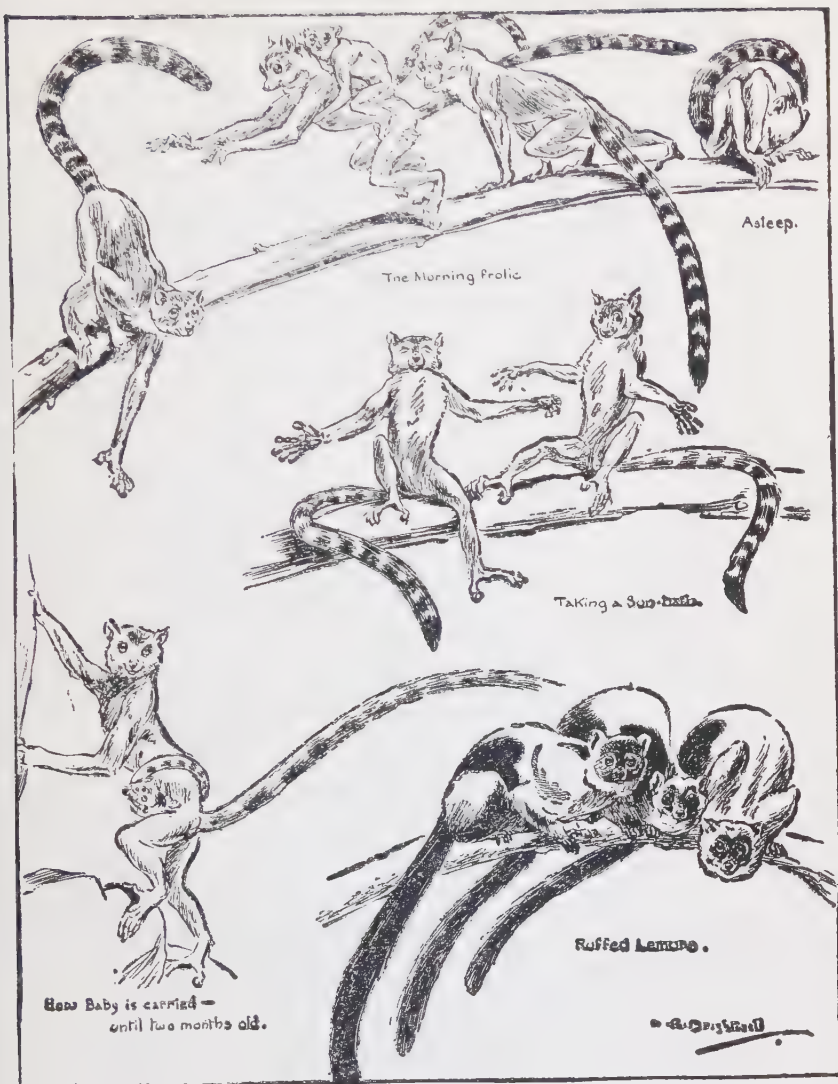
A distant relative of the spider and woolly monkeys is known as the Howler from the

extraordinary loud volume of sound which it produces as a result of an over-developed larynx. The sounds produced by this creature are so rich and deep as to be heard at considerable distances. Once the late dealer Hamlyn lodged three of these monkeys in his shop in St. George's Road, near the Tower Bridge. On a certain warm August night with a gentle south-east breeze, the musical trio were distinctly heard at Ludgate Circus—marvellous sounds to hear in mid-London—a love song from Brazil rising above the traffic's sordid drone. When many howlers of all ages take part in a choral concert the effect is ear-splitting. The howler's gigantic larynx is hidden by a huge beard which not only protects the organ from cold but acts as a buffer when two rival baritones fight—all for the love of a lady.

Perhaps the most popular society pet, is the Marmoset, and there are always a few of these little monkey aristocrats temporarily exiled from Mayfair and entertaining the world at large in Regent's Park. All these very active arboreal little creatures are small enough to tuck away comfortably inside a muff, and with few exceptions they are of a bland and cheery disposition. They differ from the other American monkeys in that all their digits with the exception of the big toe terminate in pointed claws and not in flattened nails. There are a very large number

of different kinds of marmosets. Some resemble squirrels more than monkeys, the tips of their ears being fringed with long stiff hairs. In a common form known as the Lion Marmoset the neck is surrounded by a mane of long golden hair. Although of delicate constitution, these creatures may live for some years on fruit, insects and eggs, and in captivity they have been known to make some quite remarkable dietic experiments without experiencing any very disastrous results. One, for instance, that was brought to the Zoo appeared rather listless for the first few days of its tenancy, which was hardly surprising when one learned that just prior to leaving home it had entered its mistress's study, and consumed its own weight (6 ounces) of photographic paste.

Always to be found at the Zoo are various species of Lemurs, four-handed creatures with fox-like heads, which are much lower in the scale of life than the creatures which have been already under review. These "half-monkeys" are found in Africa, Asia, and especially in Madagascar, which is the home of a very large number of different kinds. They are mostly forest dwellers, although the Ring-tailed Lemur, one of the commonest forms, is a mountaineer living amidst rocks and precipices. The ring-tailed lemur breeds freely in the Zoo, where the mother lemur may often be observed carrying her newly-born offspring transversely across the lower parts of



LEMURS

her body, the baby hanging on to the fur by gripping firmly with its hands and feet, and passing its tail over its parent's back and round its own neck. When about two months old it shifts its position to its mother's back, holding on by clasping her round the neck with its arms.

CHAPTER IV

BEARS

IN captivity the bear has always been one of the most popular of wild animals. Less than a couple of centuries ago, when he was baited with dogs in bear-pits, he contributed largely to the "merriment" of "Merry England." At a later date he was led round the country and made to dance for the delight of the less enlightened section of the populace. To-day he still provides entertainment, but in a different way. Left to himself the bear will keep a crowd happy for hours by the simple entertainment of begging for buns, biscuits or tins of treacle or by engaging in a rough and tumble with his cage companions. Besides, his comfortable appearance, his sumptuous coat, and expressive countenance make an irresistible appeal to our sense of humour. Unfortunately the bear belies his looks, and every zoo in the world can record many instances of bears "going bad" and turning on their cage-mates or their keepers. As cubs they are quite delightful, but as they come of

age the "old Adam" in the bear comes to the surface and becomes more obtrusive and menacing with advancing years. Frank Buckland whilst at college owned a bear cub that could sit at table and comfort itself with massive solemnity. When just over two years old it raided a greengrocer's shop, mauled a postman, killed a dog—and was offered to the Zoo. It was a typical bear. "Never make a pet of a bear" is the maxim of our own Zoo keepers if they wish to live long enough to enjoy a pension. Most bears are largely vegetarian, but they have the make-up of a purely carnivorous animal. They are vegetarian more from force of circumstances than choice, for as bears cannot run fast for long they must rely almost entirely on stealth for their supply of meat. The majority inhabit the colder regions of the world, and as winter approaches not only grow heavy coats but accumulate vast stores of fat. Thus reinforced they often retire underground or hide in caves and for months on end await the return of mild weather in a state of semi or complete torpor. In the spring the she-bear brings forth one or, rarely, two cubs. The he-bear being no family man deserts his wife and leads a gay bachelor life on his own as soon as he suspects the advent of a family. Sometimes, as in the case of the polar bear, the prospective mother retires to the most secluded spot she can find and there, snugly ensconced

and buried beneath the snow, brings up her offspring unhampered by the peevish demands of a selfish male.

In captivity in this country one would expect the polar bears to object to our mild climate. Not so, however; for these bears are never as happy during the winter as in the summer, and contrary to the general supposition they enjoy the heat and dislike the cold. During a heat-wave, when even some of the animals from tropical climes are suffering and seeking the shade, the polar bears will deliberately lie out in the full glare of the sun. In winter when the temperature falls below forty-five degrees they avoid the water, with the result that for several months in the year they present an unwashed appearance.

Common bears are occasionally born and brought up in the London Zoo, but polar bears have never been successfully reared in Regent's Park, the numerous cubs born invariably dying of pneumonia within a few days of their birth. The famous polar bear, Barbara, on several occasions gave birth to one or two cubs, but they unfortunately always died in spite of the efforts made to bring them up. They were sometimes left with the mother, sometimes given to a bitch to foster, and on one occasion they were taken away to be bottle-fed. The result however was always the same, the young cubs dying of

pneumonia on the third or fourth day. As a result the theory has been expounded that as the microbes of pneumonia do not exist in the Polar regions, the young bears, unlike most other animals, have no immunity against the disease. In only one zoo—the Milwaukee Zoo—has a polar bear ever been reared from birth. For some weeks before the arrival of the cub in question, the female was removed from the enclosure which she shared with her consort and was accommodated in a small den. She stopped eating three days before the cub was born. On the day of birth the thermometer registered twelve degrees below zero and the mother protected her offspring from the cold by pressing it against her abdomen and covering it with her paws. Prior to the interesting event straw had been placed in the den, but the proffered bedding was pushed aside, the expectant mother choosing to sleep on the bare boards. On the arrival of the youngster, however, the straw, which had been rejected and placed just inside her den was taken into the inner compartment during the night. She accepted further supplies of straw until she had seven bales in all. Her ability to determine approaching storms was remarkable, it appears, for when bad weather was on the way she would always pack the opening of her den from the inside leaving only a small vent open at the top. In

mild weather she would pull the straw down until the opening was practically full-sized. The mother left the den in search of food at the end of a week. The baby at quite an early stage would crawl to the opening of the compartment, but the dutiful parent was always on guard to discourage such attempts, and it was not until the young polar bear was four months old that it was allowed out without being interfered with by its over-watchful mother.

Sam and Barbara soon after their arrival in Regent's Park augmented their popularity by figuring in that select list of Zoo inhabitants that have escaped. The bears chose an early summer morning to take advantage of a faulty lock and wander forth when only workmen and keepers were abroad. Barbara had only gone about a hundred yards when she fell a victim to an attack of nerves and returned home at the double. Sam, more bold, pushed forward until he reached a point equidistant between his den and the South Gate turnstiles. There he came face to face with a working man carrying a load of planks. Four twelve-foot planks can make a lot of noise if dropped with sufficient suddenness. It is a moot point whether the man reached the exit before Sam reached his own quarters. At any rate it was the last time that the bear sought to indulge his "wanderlust."

King Henry III kept a polar bear in the



The bath club. - Polar bears.



Tea on the Mappin terrace.



The after-lunch nap.

- R. Doughtywell

BEARS

Tower, and this animal was the first of its kind to be exhibited in England. The bear was so highly prized by the King that his people were taxed 4d. a day towards its upkeep. It was supplied with a rope long enough to enable it to swim and fish for its food supply in the Thames, a procedure which if adopted at the present day would fail to supply the polar bears with even the meagrest of meals.

The bear is on the whole an intelligent animal, and endless instances have been recorded demonstrating its capacity for associating cause with effect. Zoo bears quickly learn what the public wants, and deliberately cultivate the tricks and poses best calculated to incite a steady fire of buns and biscuits. A bear has a very sweet tooth and will do anything in its power for treacle or honey. In bear-infested districts the telegraph poles must be covered for some eight feet and upwards with sheet iron to prevent the animals from clawing them to pieces in a vigorous but misguided search for the bees suggested by the inevitable humming set up in windy weather.

A large Grizzly Bear in Regent's Park was subject years ago to an umbrella complex, the violent dismantling of such an article giving him extraordinary pleasure. Umbrella mauling became in time such a "grand passion" that he actually devised an "umbrella trap." This animal learnt that the indulgent public, ever

willing to help a bear in distress, would utilize the point of an umbrella to push a fragment of bun that had fallen outside his cage just within reach of his paws. The bear invariably grabbed the bun and included the good samaritan's umbrella in his grasp. He always saw that a piece of bun was in readiness—apparently just beyond his reach. The baited trap was not left neglected for long, and the human dupe usually forgot his chagrin at losing his umbrella in the joy of watching the discomfiture of the next victim.

CHAPTER V

THE CAT FAMILY

THE typical cats number about fifty species and range in size from that of a lion or tiger to the domestic form. The range of colouring is equally striking in the many contrasts presented, but, apart from size, all cats are very similar in general structure, mentality, and, as a natural corollary, habits.

The lion ranges throughout Africa and Persia to India, and in prehistoric times roamed at large over the greater part of Europe. No other animal has commanded such universal obeisance, or enjoyed so much publicity, whether in royal coats of arms, or the humbler heraldry of public-house sign-boards. His figure is an emblem that has coloured a thousand legends and traditions.

So far as stature and development of mane are concerned the lion is seen to greatest advantage in captivity. In the wild the mane never attains to menagerie proportions, suffering much in contact with the thick undergrowth, and like

the rest of the royal animal it is often infested with parasites and mange. The mane is at once an adornment to charm the female and a protection to the throat when two males come to blows on the subject of a wife or a dinner. The probable lease of life of the lion is about thirty years, although few can attain such an age except in the safety of an up-to-date and scrupulously hygienic zoo.

The lion, because he does not habitually attack man except when under the influence of great hunger, has often been accused of cowardice. Such a charge appears however not to be well founded. According to the late Mr. Selous : "When lions are met with in the daytime they almost invariably retreat before the presence of man, even when disturbed at the carcase of an animal which they have just killed, and when they are presumably hungry. If pursued or wounded, however, they may be expected to charge. I have found in my experience that a far larger proportion of them do charge than any other animal in Southern Africa with which I am acquainted, and as their power of concealing themselves and their quickness and agility in attack are far greater than in an elephant, buffalo, or rhinoceros, I pronounce them to be more dangerous animals to meddle with than any of these. As with men and all other animals, individual lions differ so much in disposition one

from another that it is impossible to tell from one's experience of one what the next is likely to do, and I do not consider that any man has a right to say that lions are cowardly beasts because the two or three that he has shot have not happened to show fight."

The fact that two lions killed and carried off twenty-eight white men and an unrecorded number of natives during the construction of the Uganda railway line clearly proves that on occasions the so-called "King of Beasts" will compare with any other wild beast in daring and courage.

Lions were amongst the first wild animals to be kept in London, and were represented in the quite early part of the nineteenth century in the collection of wild animals exhibited at the Tower. On the foundation of the Zoological Society of London these lions were transferred to Regent's Park, there to form a nucleus of the world's greatest menagerie. Some twenty or thirty lions are usually inmates of the gardens which of late years has been most successful in rearing cubs. Formerly the Zoo was unfortunate in its endeavours to bring up lions and other members of the cat tribe, the cubs so frequently being devoured soon after birth by their mother. The reason for the failure probably was that the parent was disturbed by the noise and antics of the large number of visitors, who, hearing of

the "interesting event," attempted to catch a glimpse of her offspring. The new policy of the Zoological Society of keeping secret from the public the news of the birth of their lion cubs until the youngsters are able to look after themselves, and of their own accord leave their specially constructed sound-proof chambers, has resulted in a number of additions to the lion house. The lioness is usually an exemplary mother—solicitous, playful and yet stern as occasion demands. She is no believer in sparing the rod, and can if necessary enforce discipline with a firm but gentle tap that to the human ear suggests the knock-out at a prize fight. Like the domestic cat she often carries her young about with her in her mouth, taking them up by the scruff of the neck. Baby lions grow apace, for the year-old cub is as big as a Newfoundland dog and ten times as strong. At this age it still retains its "birth marks" of spots from which we may infer that the first lion was a creature spotted like a leopard. Many of the Zoo cubs have attained to some notoriety in the public eye, for they have been allowed to roam in open air enclosures playing alternately with a wooden ball or any keeper who could spare the time for a romp. In the early days of the Zoo some of the big cats suffered much petty annoyance from the vermin which patrolled the cages after closing time. As a result domestic cats were introduced



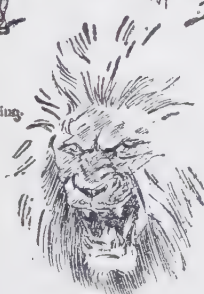
The Royal hungry.



A Bottle baby.



The Cat and the King.



Some feeding-time expressions.

e. R. Brightwell

LION STUDIES



to aid in the extermination of the rodents. The forest giants at first showed some resentment at the intrusion of their inferiors, but quickly learnt to associate them with a welcome reduction of the midnight pests. Even to-day a cat—a mere mascot—stalks up and down the lion house disdaining and disdained by the kings and queens in exile. As a matter of fact many houses in the gardens have their semi-official cat, a self-appointed assistant to the anti-rat campaign. Sometimes these cats rise by sheer force of character to an honoured position. “Mr. Toots,” a big black tom of semi-clerical appearance, was a famous instance. He ornamented the camel house, and always slept upon the larger hump of a huge Bactrian camel. The camel and his stable mate were quite willing, when feeling a little off colour, to bite their keeper, tread on his feet, or try to wedge him against the wall of the enclosure, yet they never attempted to harm “Mr. Toots.” He received an official ration from the authorities, and died one of the most honoured and lamented of the Zoo’s “irregulars.”

Some years ago a terrier was introduced into the cage of “Old Girl,” a sick lioness in the Dublin Zoo, with the object of defending her from the rats which had begun to nibble her toes. At first the dog was not at all welcome, but when the lioness saw him kill the rats she

began to appreciate her visitor. Eventually she coaxed the terrier to her and folded her paws around him. The dog slept each night on her breast enfolded by her paws, thus protecting the aged lioness from disturbance. A lion and a dog for some time shared a cage in the Melbourne Zoo. The association arose as a result of a lioness giving birth to a number of cubs one of which was taken away and given to a mongrel terrier foster-mother. The dog was devoted to her charge, and grew prouder and prouder as her nursling developed. The two animals became so fond of one another, fretting if separated, that they were left together for three years. The dog however came to dominate over the lion, which had developed into a particularly large and handsome specimen, and at feeding time would not allow her foster-child to take his share of the meal until her own appetite had been satisfied. The end to the companionship came, not, as one might suppose, by the dog being devoured, but owing to the insistent protests of the public against the cruelty to the lion, which led to the animals being separated. The dog was at first heart-broken, but on being given a second lion cub to rear in time entirely forgot her first charge.

The lion house at the Zoo is so contrived that one can feed or bed down an animal, or even conduct a minor operation upon it, without

having to enter its cage. At the same time a number of the pensioners will permit themselves to be brushed down and combed without entertaining any resentment against their valet.

The "terrific" roar of a lion which is frequently described as unique, has been very much exaggerated. Livingstone and more recent explorers have recorded the difficulty they often experienced in distinguishing the roar of the lion from that of the cock ostrich, whilst early morning visitors to the Zoo reptile house may ascertain for themselves at first hand that a large alligator can make the rafters ring as vibrantly as any lion. It must be remembered that the roar of the Zoo lions is enormously enhanced by the acoustics of the lofty house.

Lions and tigers must occasionally come together in the wild, and it is reasonable to suppose that marriages between the two animals occasionally take place. The outcome of such a union has not yet been shot either by the rifle or the "movie-man," but lion-tiger and tiger-lion hybrids are now and again bred in menageries. At the time of writing a full-grown specimen of the latter hybrid is an exhibit in Regent's Park. The animal bred in India on the estate of H.H. the Maharaja Jam Sahib of Nawanagar, better known as Prince Ranjitsinhji, is a huge creature standing higher than either

a lion or a tiger, and has a very large head with a rudiment of a lion's mane. The head and legs are faintly striped. A similar cross was exhibited in Hagenbeck's menagerie in Hamburg not so very long ago. The offspring then, as in the present case, was of large size, and weighed as much as the two parents together.

The parents of the Zoo hybrid died as a result of a fight after living together in harmony for several years. The dispute which was started by the lion and arose over a piece of meat, resulted in both combatants receiving mortal wounds.

The tiger from early times has lent itself to pageantry, and even to-day a "tiger-drive" is often attended with as much picturesque ceremony as ever it was in the days of ancient India before the advent of Western civilization. The tiger like the lion was exploited in Roman times on the grand scale. How the local dealers managed to supply the demand for the Roman arenas is difficult to conceive. Scylla accounted for nearly a hundred in a few months. Cæsar modestly contented himself with about two hundred. Helio-gabalus rode in a chariot drawn by four tigers and as many leopards, whilst Nero habitually kept a huge tigress hanging about his private apartments as a sort of super-bodyguard. The tiger equals the lion in size and usually exceeds it in ferocity. It is estimated that at least a thousand

human beings are annually slain by tigers in India, China, and Siberia, and there is reason to believe that the number may be far exceeded. Some tigers nevertheless become very tame in captivity and two exceptionally large animals in the Regent's Park menagerie are exceedingly affectionate and when patted roll about on the ground in an apparent paroxysm of joy.

The tiger differs markedly from the lion in its choice of habitat. Whereas the lion haunts the plains, the tigers frequent dense bush. Both animals are perfectly "in tune" with their surroundings. The lion's khaki-coloured skin melts into the background with baffling efficiency. The tiger's bold stripe-pattern similarly becomes one in a setting of tall bright stems, and dark longitudinal shadows. The tiger cubs are miniature replicas of their parents in marked contrast to lion cubs.

The range of the tiger is interesting, since, although absent in temperate regions, it flourishes in extremes of heat and cold. Common in the hottest parts of India, Burma, and Sumatra, it is also found at the height of six or seven thousand feet up in the Himalayas, and occurs in Siberia where it develops a thick and almost shaggy coat. The male tiger develops stubby "mutton chop" whiskers—the best he can do in the way of a mane, and consequently looks smaller than a full-grown lion. Actually he is

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a slightly bigger beast but lacks the lion's voice. Tigers at times emit a short rasping roar ; but more usually a roof-top " mew " on a big scale.

The leopard enjoys a much wider range than either the lion or the tiger, and is still sufficiently numerous to exert a check upon the surplus population of tropical Africa and Asia. In the old Roman days the animal was used in enormous quantities for the purpose of destroying objectionable Christians, gladiators, bulls, bears, etc. This gorgeously-tinted cat exhibits great diversity of colour. Certain specimens show fawn markings on a creamy ground colour, whilst others may be entirely black. The latter, which are particularly common in the Malay Peninsula, are generally regarded as being much fiercer than the normally coloured animal, and have been stated to be quite untameable, even in the cub stage. That however is not true, as a number of black leopards which have been exhibited from time to time in our Zoological Gardens have failed to live up to their reputations and have proved in several instances on the contrary unusually tractable. Like the lion and tiger, the leopard, especially when old, may become almost exclusively a man-eater.

The jaguar of South America resembles the leopard in size and form. It, and the uniformly dun-coloured puma, the most docile member of

the wild-cat family, are the only two large cats inhabiting the New World.

A few of the big cats can be trained to man's service. The Cheetah of India, the Serval of Africa, and the Caracal of Persia have been all used for coursing. Of these the cheetah, which looks like a high standing, spindle-shanked leopard, is pre-eminently the swiftest, and is in constant demand by the sporting potentates of Central India. Cheetahs are taken to the meet hooded, covered with gorgeous trapping, and are carried on horseback or upon specially constructed bullock waggon. They run down the quarry at an incredible speed, covering the ground in a series of enormous bounds.

The most handsome of all the leopards is the Ounce or Snow Leopard of Thibet. To meet the extreme cold of the Himalayas it has an enormously thick bushy coat, the large black spots showing in a rather cloudy manner against an ashen ground. The animal is capable of conceiving great affection for its keeper and may on occasions insist upon his company with such well meaning but massive persistence as to render his withdrawal from its cage a matter of considerable tact. A number of natural history and travel books record the statement that the larger members of the cat tribe will always attack black men in preference to white :

“A lion never will attack
A white if he can get a black.”

It is certainly true that the feline inhabitants of our zoological gardens become restless whenever they see a negro or Indian, and some comparatively tame lions, tigers and leopards have on occasions showed signs of extraordinary excitement and ferocity at the presence in their house of oriental visitors.

CHAPTER VI

THE SWIMMING BATH

THE Zoo's swimmers vary infinitely in shape and size, but they all, excluding some of the inhabitants of the aquarium, have two things in common, two things indispensable to anyone making swimming an almost life-long occupation—fat, and a “swimmer's foot.” Fat is of course vital to keep out the cold during long immersion ; and constant treading of the water tends to splay the pedal extremities—sometimes to a grotesque degree. One of the menagerie's champion swimmers is the hippopotamus, a creature which, owing to its massive form and its habit of swimming totally submerged, is seldom given its due as the Captain Webb of the wild animal world. The common hippopotamus of the tropical rivers of Africa may attain a weight of over four tons and is, next to the elephant, the bulkiest of all existing animals. It is characterized by very short limbs, four toes of equal size partly connected by webs, large incisor teeth which grow throughout life, a large and somewhat

elongated head, a pair of very small eyes, and an enormous cavernous mouth with which it is capable of indulging in a four-foot yawn. The only other living species of hippopotamus is the pigmy form of the almost inaccessible swamp regions of Liberia. The disparity in size between the two is very remarkable, for the pigmy hippo seldom reaches a height of thirty inches, and never weighs more than $3\frac{1}{2}$ cwt. A full-grown specimen is in fact equal in size to that of a year-old baby of the common hippopotamus. Apart from its smaller size, it differs in a rounder head, much longer legs and tail, and in the eyes not protruding in the manner characteristic of its only living relative.

Although well supplied with hippopotami the Zoo has no individual on its books to-day to compare with Guy Fawkes, who for many years held the proud position of the oldest inhabitant of the gardens. His father, the first hippopotamus to be exhibited in Regent's Park, arrived in the year 1850, and a wife was found for him four years later. Guy Fawkes who saw a number of other hippos arrive and leave the Zoo, was born in 1872, and lived until all London mourned him in 1908. Few animals gave more pleasure to the public or more anxiety to the authorities.

He had a very uncertain temper, and when sulky would put up a ten hour swim without deigning to come ashore in response to public



Hippo - ashore.



The ever open door.



Baby carriage.



A tail-piece.

E. R. Brightwell.

HIPPOS

blandishments. On one occasion he gained access to the wrong paddock, and was only induced to return to his own enclosure by being lured back at a heavy but furious gallop, in chase of a particular keeper for whom he had a strong aversion.

The Tapir, that curious beast which combines the external features of the horse with that of the elephant in almost equal proportions, is another born swimmer that however does not look like one. Ages ago when the mammoth roamed the earth it enjoyed an almost world-wide distribution and often attained to the dimensions of a hippopotamus. To-day only five species of tapir survive. One is limited to the Malay Peninsula ; the other four are confined to the swamps of Central and South America. In the American forms the skin is uniform black, but in the Malayan, the largest of the five, the middle part of the body is silver white. They are all still tolerably abundant, despite the fact that their flesh is highly esteemed and their hide in great demand. Tapirs inhabit dense reed thickets wherein they make long runs, and live upon swamp and aquatic plants. They are, as a rule, gentle and docile in captivity, and breed freely. The young of all tapirs are barred and spotted with white, as were probably their prehistoric ancestors.

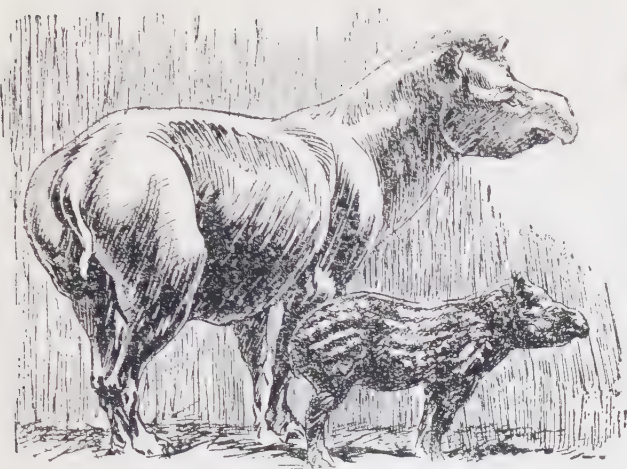
Generally silent the tapir can under stress

64 A NATURALIST AT THE ZOO

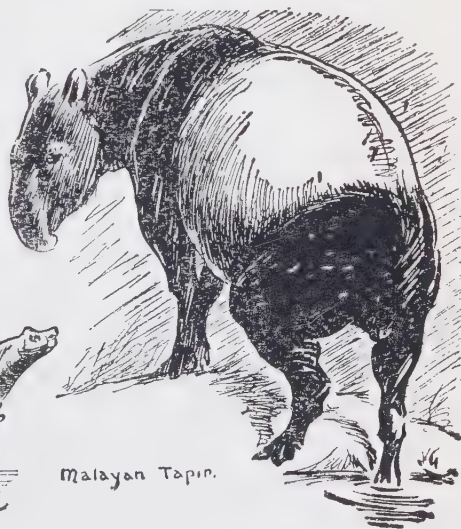
relieve its feelings in a shrill cry. It is a rather dull animal, but a certain Brazilian tapir at the Zoo evinced a sense of fun, as during the summer months it would resolutely refuse to go to bed, and by galloping furiously round and round its paddock regularly exercised three keepers armed with stable brooms for a good hour after the staff was entitled to "knock off." As a swimmer the tapir shows great agility, and like the hippo can walk upon the river bed. In addition it is capable of performing a running dive. This ability to swim stands the American species in good stead when pursued by the jaguar. But the water too has its terrors. The big aquatic snake, the anaconda, sometimes claims a tapir in mid-stream, whilst the "cariba" fish, which congregates in large shoals, offers a continual menace. Surrounding the swimming tapirs a number of cariba may with their razor-edged teeth literally tear the animal into small pieces before it can gain the further shore and safety.

Although we have given the Hippopotamus the pride of place by virtue of its size, the Sea Lion could easily carry off the mammalian "belt" for grace, agility and high diving.

At one time the Zoo sea-lions emulated their music-hall confreres and mounting upon chairs balanced footballs and bottles on their noses. To-day feeding time is made a much more



Brazilian Tapir and young.



Malayan Tapir.



TAPIRS

natural and artistic exhibition, and there is no finer sight in all the gardens than that of these animals hurling themselves off a twenty-foot cliff, or surging through the water, twisting and turning whilst at full speed, and dodging submerged rocks with a consummate grace and rapidity that reduces by comparison the best efforts of a motor launch to the feeble progress of a canal barge. The sea lion has a big brain, and vast capacities for cunning and resource. He can escape from almost any kind of enclosure or packing case unless the most vigorous precautions are taken. On the other hand he will protest loudly at being required to pass through a doorway to which he has taken a dislike. The animal usually objects to negotiating any aperture the sides of which he can touch with his flippers, unless there is some object in his doing so, when he will squeeze through a fissure that threatens to crack his ribs. The intelligence and endurance of the sea lion may be utilized for more practical purposes than mere entertainment "stunts." Not long ago a demonstration was given at the Westminster baths which proved that a sea lion could save life according to the Royal Humane Society's rules. At the Dresden Zoo the sea lions collect money to pay for their keep. A tall post with a pulley cord is so arranged that visitors may place a coin in a slot near the base of the post. The sea lion then becomes active.

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Seizing the end of the cord in his mouth he gives a vigorous jerk which forces a fish up a tube to the top of the post, where it shoots off a miniature diving board into the air and falls into the mouth of the expectant sea lion. It is no longer a secret that during the Great War the sea lion played his part in tracking submarines in the early stages of the conflict, before he was superseded by the more reliable hydrophone. The sea lions touring the halls were commandeered, and put through a rigorous course of training in a London swimming bath. The most efficient recruits were then taken to the coast where they were taught to report on any unusual vibrations under water by at once coming to the surface and barking vigorously. A long cord was attached to the sea lion, connecting him with a scarlet buoy, so that he could always be kept in sight. The sea lion corps developed but one deserter, and for all that is known of him he may still be at large in the Channel. Quick as the Zoo sea lions are to capture fish under water, or when thrown to them in the air, they are not always quite quick enough. In winter the gulls haunt the sea lion pond at feeding time, and sometimes get there first. The gulls hold the trump card, for they can fly. This was not the case with the penguins when they shared the pond with the sea lions. All went well until one fateful day a penguin

attached itself to one end of a whiting and a big sea lion to the other. The sea-lion to save time swallowed both the fish and the bird. This was bad, but worse was to follow, as from that day onwards the sea-lion acquired a taste for penguins, and proceeded to attack the remaining birds with which he had previously lived in harmony. The sea-lion like most other creatures plays its part in the scheme of things, as the following story goes to show. Up to a few years ago the guano deposits on a group of lonely islands off the Californian coast were bringing in a fortune to a certain company. To-day there is not enough guano left there to fertilize a window-box. The tragedy is explained by the fact, that man attempted to upset the "balance of Nature." The sea-birds that deposited the guano lived on fish, which they shared with a large colony of sea-lions—thousands upon thousands of them. The directors of the company conceived the notion that if the sea-lions were removed there would be more fish, and as a natural sequence there would be more guano. Rifles soon eliminated the sea-lions, but from that time onwards the birds that laid the golden manure died or departed. The company promoters had failed to realize that the far-ranging sea-lions had acted as so many sheep dogs and rounded up the fish until they came within easy distance of the birds.

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It may not be generally known that the sea-lion has an ear for music. This was proved conclusively at Regent's Park. A string orchestra once favoured the sea-lions with a wide range of selections. Chopin and Brahms caused the sea-lions to come half out of the water, and with their eyes half closed to remain in dreamy ecstasy, until the last strains had died away. Noisy martial music seemed to worry them. Jazz sent them below.

Sea-lions are occasionally born and bred in Regent's Park. Although born to a life afloat the infant sea-lion is not allowed to enter the water for the first few weeks. His head is then so enormously disproportionate to the rest of him that it would probably take the creature straight to the bottom if launched. At a later stage the education of the baby is taken in hand, and much entertainment is caused by observing the mother dragging her offspring by her flippers after her into the water. When about a couple of months old the little sea-lion still swims very clumsily, and can only maintain itself for a few seconds in the water. As soon, however, as it shows obvious signs of distress the mother by swimming under her baby succeeds in getting it on her back, and makes for the shore. The father takes no part in the swimming lesson, and appears to avoid his offspring.

To the inhabitants of certain parts of Hampstead, sea-lions are regarded as being weather-wise, as they have observed that a sea-lion concert is almost invariably followed by rain. Our meteorological authorities would, however, receive little assistance from them, as their insistent barking denotes nothing more than a healthy appetite. The phenomenon is explained by the Zoo's topographical position in relation to the district where they are heard, and in conjunction with the fact that the sea-lions are only audible there when the wind shifts to the south-west.

The Common Seal which differs from the sea-lion in having no external ears, in its very, very short front flippers, and in dragging its hind limbs which are not made use of in progression behind the body, appears to little advantage above water-mark. Under water he is however as active as his larger relative and will travel at thirty miles an hour when pursuing fish. Many have come to the Zoo as the result of involving themselves in herring nets, whilst a few have paid the penalty of straying far up the Thames.

Of recent years the Regent's Park menagerie has been ornamented by young specimens of the Elephant Seal averaging a length of seven feet, and a weight of 600 lbs. The elephant seal lives in the South Atlantic, Pacific and Indian

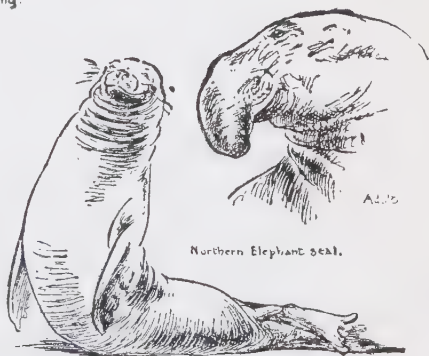
Oceans and lays claim to its title on the grounds that in the adult male, which reaches a length of twenty feet, the snout develops a sort of exaggerated Roman nose or trunk about a foot in length. At the Zoo he chiefly calls attention to himself by sitting up and giving long hissing sighs, suggestive of the gradual collapse of a balloon. The plasticity of the elephant seal is extraordinary, for when out of the water he can rear up until his front flippers are clear of the ground, and can then bend backwards to make his snout touch his short stumpy tail. It is questionable if any inmate of the Zoo's swimming bath ever enjoyed such universal popularity as did the late lamented "Andy," a young walrus from the far North. Andy who cost the Zoological Society about £10 a week in fish might have lived to cut his tusks but for suddenly breaking a blood vessel whilst under water in the hot summer of 1925. He enjoyed a most tractable, not to say endearing, disposition, and would follow his keeper like a dog, loudly bleating for attention from all and sundry. The walrus, if bred to maturity in a zoo, might prove however something of a problem, for, quite apart from his food bill, his temper does not improve with age and would necessitate an "elephant proof" enclosure. The adult bull walrus like the adult bull elephant is apt to be troublesome and in Alaska an old bull



In full swing.



Baby Walrus.



Northern Elephant Seal.

Young - "look out" pose.

A. P. M. 1906

SEA-LIONS, WALRUS, AND ELEPHANT SEAL

walrus will often develop a penchant for killing seals. This makes him a marked beast and the Esquimos do not rest until the criminal has been killed. Cod soaked in whale oil seemed to suit walruses in captivity instead of their native clams which they grub up with their tusks, and sift away the mud attached through their soup-strainer moustaches. They are slow bulky animals, built on too clumsy a plan to often catch the swiftly-moving fish. The walrus inhabits all arctic waters but is fast diminishing in numbers, especially off the coast of North America where it is much hunted for the oil it produces and for its valuable tusks. According to American official reports recently published, 2,000,000 gallons of walrus oil is the annual yield, representing the destruction of more than 100,000 animals.

For general activity, and capacity to enjoy life, the otter runs the sea-lion a very close second. This fascinating creature, which has a remarkably flexible body, haunts the less frequented waterways of Great Britain, making its home in excavations dug in river-banks or natural hollows beneath rocks or the roots of trees. In such retreats the female rears a litter of usually three or four cubs, which she trains to catch fish at an early age, and joins them in the most eccentric and extravagant under-water gambols. Although at times condescending to kill and eat water-rats, the otter is essentially a fisherman and, like

some other exponents of the gentle art, often kills more than he requires. Game-laws and close seasons mean nothing to him, hence the price upon his head. Otters are particularly fond of the "shoulder piece" of a trout or salmon, and a single animal will partake of this delicacy from a score of fish in succession, leaving the rest of the fish to pollute the stream. As often as not the carcase is dragged upon the bank, and left an affront to the water-bailiff or game-keeper. The otter has of late years done well at the Zoo, considering its necessarily restricted quarters, showing high intelligence and making an entertaining exhibit. It will amuse itself for hours together with such inappropriate offerings as oranges, carrots and buns, which have been thrown into its swimming pool by a well-meaning if ignorant public. Before the construction of their present pond in 1920, the sides of which are undercut, the Zoo otters managed to escape at fairly frequent intervals. One of these creatures that succeeded in some mysterious manner in climbing the fence of its enclosure, made for the Regent's Canal, where it was mistaken for a sea-lion. The information was brought by the skipper of a barge, who in forcible language resented the suggestion that his knowledge of zoological nomenclature might possibly be at fault. He stated that the sea-lion could be seen disporting itself in that part of the canal that

lies opposite the Albany Street barracks. An expedition was at once formed, and a number of keepers with nets and buckets of fish were soon on the scene, where they saw, but failed to capture, the escaped otter. That such a mistake in the identity of the animal should have been made did not greatly surprise the Zoo officials, as another otter that left the menagerie without being invited to do so, and which was eventually recaptured in the backyard of a house in Camden Town, was mistaken by its captor for a Kangaroo!

The beaver, an aquatic rodent now confined almost exclusively to Canada, but which up to a few years ago still haunted the Rhone Valley, is a Zoo favourite that has not only little to learn in the art of swimming, but is actually capable of constructing its own swimming bath. It makes deep burrows in the banks, and supplements these with enormous mounds of sticks and branches, which may sometimes attain the size of a small bungalow. To "work like a beaver" has become part of our national speech, and it must be admitted that no stories related of the energy of this animal can be too extravagant to be wholly incredible. An eight-hour day is a very gentle spell of work for a beaver, for when preparing to make a lodge in order to protect itself against the rigours of the winter it will go on working until its strength gives out. The indefatigable builders ply their trade chiefly at

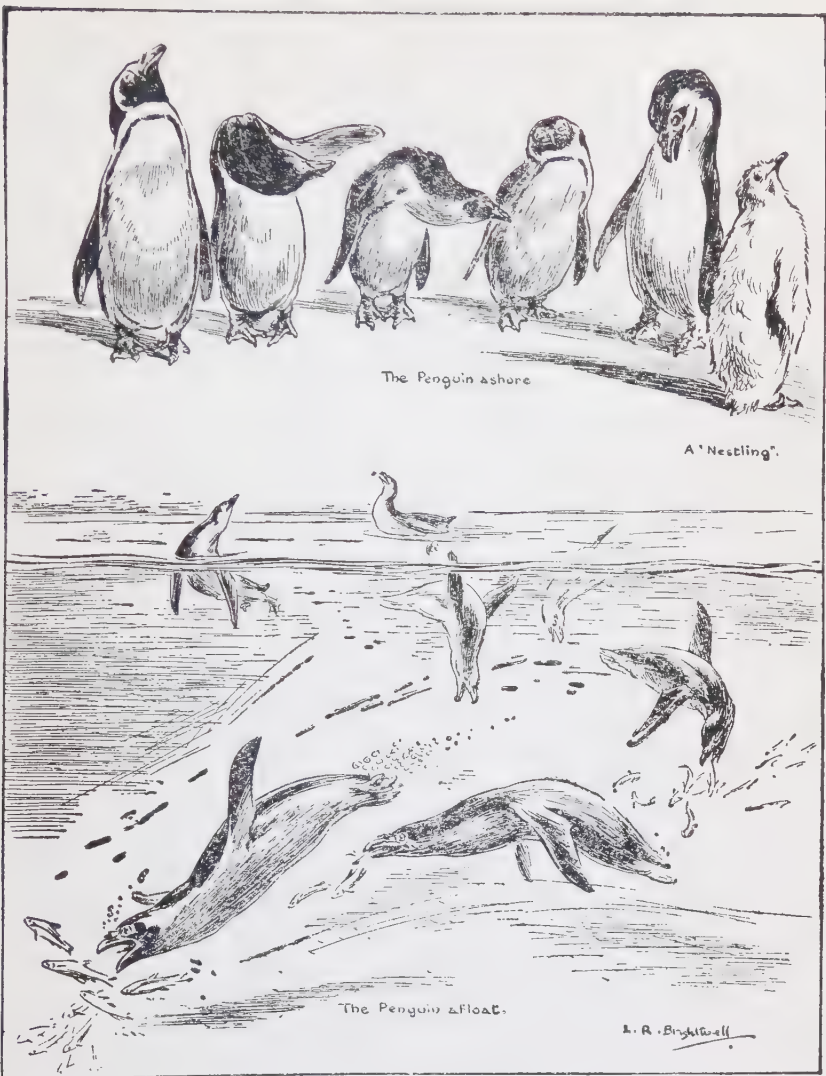
night, raising large dams, constructing ponds, canals, and felling trees, sometimes over a foot in girth. After eating the bark and cutting off the coarser branches the trees are often allowed to float down stream in true lumberman style. These energetic animals have from time to time caused considerable inconvenience by raising dams of such a size and strength as to effectually block large streams and flood the surrounding country. The beaver's most striking feature is its enormous naked trowel-shaped tail. It has often been asserted that this appendage is used to smooth the walls it erects. But it is not so, all the plastering being accomplished with its fore-paws. The tail is used only as a rudder—and an alarm gun. Should the animal be suddenly scared it at once dives into the water and in the act brings its tail down upon the surface with a loud resounding smack. This is the "take cover" signal, and every beaver in the neighbourhood immediately acts upon it. Want of space has compelled the London Zoo to confine its beavers in a comparatively small enclosure, where they content themselves with a little tree-cutting and the construction of diminutive lodges.

The large Coypu Rat of South America, whose fur is sold under the trade name of "nutrea," and the Capybara, the largest of living rodents, which attains a length of over four feet and a weight of 120 lbs., also an

inhabitant of the South American continent, are other keen competitors for the Zoo's swimming championship. The former animal is frequently exhibited in travelling menageries as a giant rat from a London sewer. Both the coypu and the capybara are being fast hunted to extinction, and like so many animals will soon find zoological gardens their last line of defence.

Of all the members represented at the Zoo congress of bird swimmers the penguin is certainly the most popular with the general public. Although ashore he is a distinctly clumsy and ungainly creature, and a subject for mirth, afloat or under the surface of the water he cuts a very different figure, and is more than capable of holding his own amongst his aquatic competitors. Although when reduced to a skeleton the penguin is obviously related to the domestic fowl, in life there is little about his general appearance to proclaim him a bird. His beak and webbed feet he shares in common with several mammals, whilst his bodily covering is more suggestive of fur than feathers. A score or more different kinds of penguins are known, the various species ranging in size from that of a domestic duck to that of an eight-year-old child. All bear a strong family likeness and are very similar in their ways of life. They are essentially birds of the Southern Hemisphere, the Galapagos Islands being their most northerly

station. In the blizzard-enshrouded islands in the far south penguins breed by the million and cover the ice-bound landscape with their quaint uniforms of black and white. The penguin lays but a single egg which is tucked snugly away between the mother's feet. In due season the chick emerges—a weird caricature of its parents, being clothed from head to foot in a shaggy brown coat, suggestive of a human arctic outfit. Although able to walk about at a quite early age, it cannot feed itself and relies for sustenance upon the fish brought to it by its elders. Should a baby penguin become orphaned a host of adults are only too ready to foster it, and the chick is sometimes literally choked and smothered by a swarm of would-be parents. Penguins have no means of defence and although their slaughter is now a matter of legislation several millions are annually killed for the oil they produce. Such, however, is their fecundity that they are far from immediately joining the ranks of the extinct. As a number of popular films have revealed they are amazingly simple and unsophisticated creatures, readily making overtures to that most dangerous of all animals, man, upon the shortest of acquaintanceship. The average penguin can remain several minutes beneath the surface of the water and can under pressure swim with astonishing speed. When the necessity arises—as for instance when pursued by the killer whale, which abounds



CAPE PENGUINS

throughout the Antarctic seas, it can attain sufficient momentum to heave itself high and dry upon an ice-floe two feet at least above the water line.

That the penguin's sight is far better below than above water is appreciated by the visitor to the diving-birds' house where he may observe a single specimen let loose in its swimming tank run down and pouch some thirty minnows in less than a couple of minutes. Apart from penguins the diving-birds' house is often tenanted by Guillemots, Cormorants, Razor-bills, Divers, Darters, and Puffins. The Great Northern Diver, which has a very striking black and white plumage, is remarkable for its almost demoniacal cry. It is capable of total submersion for over eight minutes, without coming to the surface for a breather.

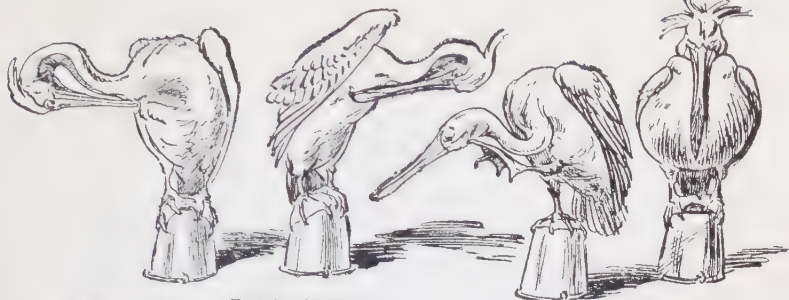
The Darters of India, Africa and America closely resemble the common cormorant, but have the neck bones arranged on a sort of hair-trigger principle, so that the neck "goes off" with a jerk, and the needle-pointed bill transfixes the fish at a blow. Whereas the cormorant swallows its food under water, the darter always brings its catch to the surface before devouring it.

The waste fuel exuded by oil-driven vessels is the undoing of many of these birds, and they are sent to Regent's Park by humane holiday-makers after a more or less unsuccessful attempt

has been made to cleanse the helpless sufferers.

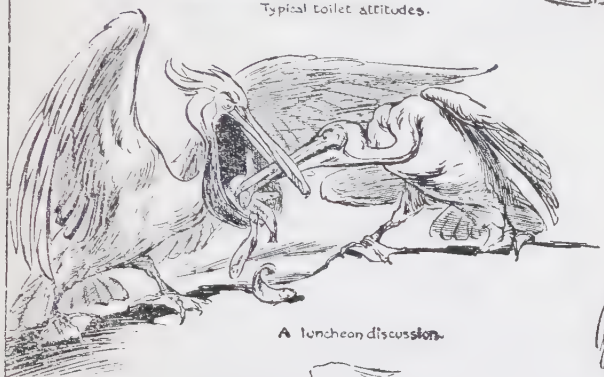
Many expert swimmers are content merely to flirt with the accommodation provided for them at the Zoo. The Pelicans although found encamped around the larger temperate and sub-tropical lakes of both hemispheres, seem only to swim from necessity. They live entirely upon fish which they store in the enormous membranous pouch beneath the bill. They are most voracious creatures, and dinner-time at the Zoo is always made the occasion for a good deal of petty larceny. In the wild state they will nest either in trees or on the ground. There are never more than three young at a time, and these are fed, as in the case of certain other birds, upon the partly digested fish regurgitated from the parent's stomach—a habit which gave rise to the legend that the pelican fed her young with blood from her own breast—a piece of un-natural history which has won the bird an undeserved reputation for self-sacrifice. One species of pelican often seen in our gardens develops a horny ornament on its bill during the breeding season, which decoration it sheds after matrimony.

The Flamingos of which the Zoo has quite a flock, normally inhabit much the same situations as those affected by the pelicans. In the wild they form vast colonies where the hens raise curious chimney-pot shaped nests of mud with hollowed tops. In the cup-like depression the



Typical toilet attitudes.

Immaculate



A luncheon discussion.



"Airing" the pouch - by turning it inside out



"Tea for three"



A Pledgeling.

B. R. Brightwell.

PELICANS

egg is laid and being nearly a foot above ground is quite secure from any sudden rise of the adjacent waters. The flamingo's extraordinary bill is only a very exaggerated version of the duck's strainer beak, and is perfectly adapted for sorting out small snails, etc. from the river mud which it frequents. Although hailing from sub-tropical regions flamingos can endure great cold, and occasionally suffer for presuming on their hardiness. During frosty weather these birds at the Zoo are kept indoors, not that they require warmth, but because some years ago they delayed so long leaving their pool that the morning frost found them frozen fast by the ankles, in which undignified pose they suffered considerably, and were forced to remain until rescued. A worse case was that of a water-hen which sat down on the ice and being suddenly startled arose in a great hurry and left her tail feathers behind her.

In spite of their enormous bulk the Crocodiles and Alligators are to be reckoned with to give a good account of themselves in the Zoo's swimming championship. They are indeed fitted admirably for an aquatic life, for apart from possessing webbed feet and a compressed tail adapted for propulsion in the water, their eyes, nostrils and ears are situated right on the top of their heads with the result that these organs are able to function when the reptiles are floating about with only the upper part of their heads

exposed. Further the nostrils and ears are furnished with movable valves which close when the animals are submerged, thus preventing the inflow of the water. The eyes in addition to a pair of eyelids, are protected by transparent discs, whilst the very broad tongue is so attached that it forms a valve to prevent the water rushing down the throat when the mouth is open.

The question as to what constitutes the difference between a crocodile and an alligator is one that is constantly being put to the writer and to the keeper of the Zoo's reptile house. The differences are chiefly of an anatomical nature. Broadly speaking in the crocodiles the snout is more or less pointed, and the fourth tooth of the lower jaw, the largest, fits into a notch in the upper, whilst in the alligators the snout is usually rounder, and the tooth in question fits into a pit. Crocodiles in captivity remain almost invariably savage, but alligators become comparatively tame, and the keepers in the reptile house enter the tank of the large, ten-foot-long specimens without the slightest danger of being attacked.

The Porose Crocodile, a man-eater attaining a length of twenty feet and a weight of over a ton, is the most aquatic member of its tribe. It swims far out to sea and occurs in numbers in the Indo-Pacific region. Unlike other crocodiles and alligators it only leaves the water in

order to lay its eggs, and the family cares having been cast aside it once more roams the oceans. The African crocodile is another man-eater. At a recent meeting of the Zoological Society Mr. Swynnerton, the game warden of Tanganyika Territory, exhibited the contents of the stomach of a large specimen which he had shot. The exhibition was of a decidedly gruesome nature, for apart from antelope hoofs, tortoise-shells, and porcupine quills, the reptile when opened was found to contain a large number of metal bangles such as are worn as bracelets and anklets by the native women, beads, and a long strand of metal cord. The strand of cord solved the mystery of the disappearance of a native boy, who was known to frequent the neighbourhood of the river-bank in order to collect wood, the cord being similar to the type he used for tying his bundles together. Two small pieces of elephant tusk were also found in this crocodile, but no explanation was offered as to how they came into the reptile's possession. If the full facts were known they would no doubt bring to light another human tragedy.

The Zoo crocodiles and alligators are as a rule voiceless, but on occasions, for no apparent reason, they break forth into a reptilian oratorio which if not exactly musical is at any rate awe-inspiring, and early morning visitors to the reptile house are now and then treated to a selection

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from their repertoire. The largest alligator starts the ball rolling. He opens with a few preliminary roars. The other alligators and crocodiles soon join in with the result that the house shakes with the din. Their voices differ according to the species to which they belong. Thus the American alligator roars like a lion, whilst the Chinese alligator produces sounds similar to those of an angry dog—only much louder. The long-nosed Indian gharial faithfully mimics a bad sailor on a rough sea.

CHAPTER VII

THE GIRAFFE

It is difficult to ignore an animal that towers six foot or more above the tallest elephant, so that no apology is offered for giving the Giraffe a chapter practically to itself. The giraffe, which has been divided into a number of distinct species, a scientific achievement which meets with the approval of a certain type of zoologist, and its relative the Okapi, are both confined to tropical Africa, and are the sole survivors of a race of giants. The remains of extinct giraffe-like animals, some of them bearing enormous horns, have been found in Asia and Europe. But for vigorous protection the giraffe and okapi would by now have joined the great majority. Fortunately a system of "form filling" has been devised by the South African and other governments which usually breaks the "sportsman's" heart long before he arrives at the gun-loading stage. The animal is capable of giving very powerful kicks with its fore-feet.

It relies for safety, however, mostly upon camouflage, the creature's wonderful spot-pattern blending perfectly with the checkering of sunlight upon dense foliage, and in the native bush it is practically invisible, even at a few yards' distance. The giraffe's five horns—four of which are hair clad, are of slight offensive power, although a big dent in the oak boarding of the giraffe house shows that on occasions they can be used with effect. This dent, now covered with a sheet of glass was caused by a giraffe which used its head and seven feet of neck to aim a death-blow at its keeper. The cause of discussion is not recorded. Even under great provocation the giraffe is practically mute, although capable when young of a feeble bleat.

The London Zoo was the first public menagerie ever to exhibit a living giraffe in England. Many have come and passed out since the first arrived, and their histories make interesting reading. Giraffes were known to the ancient Egyptians, and there was one at Rome at the period of Julius Cæsar's dictatorship. Later they took part in the triumphal processions of the Roman emperors. During the Middle Ages a few living examples were brought to Europe, but not until 1827 did one reach this country alive. In that year the Viceroy of Egypt obtained two young giraffes raised upon camel's milk, and he presented one to the French Consul, and



GIRAFFES

the other to George IV of England. The animals travelled in specially constructed padded crates. The Paris specimen lived nearly twenty years, but its companion transported to London was less fortunate, and succumbed after only two and a half years' captivity. It is doubtful if even the arrival in this country of the most famous of American kinema stars could repeat the sensation which the first giraffe to arrive in London caused throughout the land. For a time it appears, every fashion was *à la giraffe*, ladies wearing dresses, and men carrying handkerchiefs, bearing portraits of the animal. In 1836 four specimens arrived at the Zoo, from which quartet and their descendants seventeen giraffes were bred, the last survivor of the stock dying fifty years later. A disastrous fire broke out in the giraffe house in 1892 and the Zoological Society's entire stock of giraffes perished. For three years the Zoo was giraffeless, the Soudan from whence most living specimens emanate being closed by an outbreak of Mahdism. The giraffe trade recommenced in 1895, and a young female specimen was purchased from a dealer. A pair presented by the Governor of Kordofan in 1902 bred several calves, and of these, Maud, born five years later, still graces the gardens. She is remarkably docile, and was helped through her early days by means of an ordinary baby's feeding bottle.

Giraffes are amongst the most popular inhabitants of the Regent's Park menagerie, but full-grown specimens are valued at the Zoological Society's annual stocktaking at a very low figure. This is due to the fact that they cannot be transported owing to the enormous length of their necks which are too tall to pass under tunnels.

The Okapi whose very existence was unknown until about twenty years ago, was discovered by Sir Harry Johnston, who made paintings of it from life and sent home skins and skeletons to Europe. Since then a few unsuccessful attempts have been made to keep young specimens in the Antwerp Zoo. It is a native of the Ituri forest where its possible existence was first suspected from the strips of strangely marked hide displayed on warriors' shields.

CHAPTER VIII

POUCHED ANIMALS

PERHAPS the most attractive visions of motherhood presented in the Regent's Park menagerie are to be found in those houses and enclosures allotted to the marsupials or pouched animals—a group now confined almost entirely to Australia. They exhibit an infinite variety of form, for some are like bears, some like wolves, some like mice, and a few like nothing on earth except themselves. All, however, are linked together by a single tie—the abdominal pouch, in which they spend their infancy.

The pouched animals when first they are brought into the world are in a very immature state and so entirely helpless that they have to be transferred at once to the pocket in which they suckle. Often they cling to their mother's apron strings until they are over a year old, and at the Zoo one may often see the youngsters having recourse to the maternal pouch when, owing to their having all but outgrown that

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receptacle, it must be found an uncomfortably tight fit.

The most familiar pouched animal is the Kangaroo. The first settlers in Australia having got over their astonishment at seeing such a peculiar animal desired to know more about the strange beast and conveyed their desire to the aborigines. "Kangaroo?" answered the natives. The name has remained, but without the question mark, for translated literally the word Kangaroo merely implies "What do you mean."

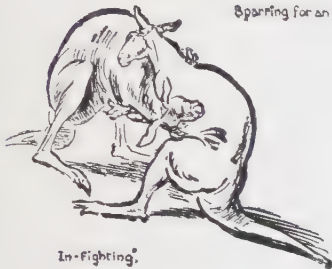
We are all familiar with the manner in which a kangaroo supports itself on its hind limbs and progresses by a series of long leaps. Although a champion long jumper, he does not, however, excel at the high jump, and captive specimens can be retained in their enclosures by a comparatively low fence. He is a born pugilist and may be seen any day in Regent's Park fighting out a twenty-minutes' round with one of his cage companions, boxing with great efficiency although with little regard for the canons laid down by the National Sporting Club. The animal's foot work is most noticeable and he can keep his opponent from closing with him in a manner similar to that formerly permitted under certain Continental rules. His kick is certainly far worse than his bite, and there are records of dogs and even men being ripped open by a single slash



Sparring for an opening.



Foot work



In-fighting.



Taking the count.



"A family group"

L. R. Brightwell

KANGAROOS

from a kangaroo's hind foot, which is armed with long claws. Indeed all the animal's strength appears to be concentrated in his hind limbs and tail, the latter appendage being used when resting in the manner of a shooting-seat. His fore-limbs are comparatively weak and of little use save at meal times. His brain like that of all the pouched animals is distinctly inferior in quality. The many species of kangaroos vary enormously in size, some being no larger than a Pekinese dog, whilst others may stand nearly six feet in height.

The task of unpacking a large collection of animals is generally a rather dull piece of menagerie routine. On one occasion such a proceeding at the Zoo was enlivened, however, by the escape of a kangaroo which had arrived along with a large number of other animals from Australia. It went off at full speed and passing out of a service door which had been left open got clear of the gardens. As soon as those in charge had got over their surprise chase was given in a motor car, and the animal was eventually run to ground in the back garden of a house in Baker Street.

The Tree - Kangaroos differ from the ordinary forms of kangaroo in that the fore and hind limbs are much less disproportionate than is usual in the group. They have frequently been exhibited in the Zoo, where they climb

the trees of their enclosure and browse on the foliage.

In pre-war days kangaroos were farmed extensively on the Island of Herm—one of the Channel group. Bean-feast parties visiting the famous shell beach for the first time often received something of a shock on suddenly being confronted by kangaroos, and the animals are reputed to have made more than one convert to the cause of total abstinence.

The pouched animals were amongst the first of the warm-blooded, hair-bearing vertebrates to appear on earth and can count some giants amongst their ancestors. Some of these must have been terrible creatures—monsters that preyed upon other vegetable feeding forms. Only two carnivorous forms exist to-day—the dog-like Tasmanian Wolf, who is now on the verge of extinction, although not so many years ago he was still a source of great financial loss to the sheep farmers; and the Tasmanian Devil, a thick-set stocky creature, deep black in colour, strikingly marked with white, somewhat suggesting a long-tailed bear cub. The kangaroo in wolf's clothing is a mountain beast, whilst the "devil" infests the bush. Both bring forth litters of three or four at a birth, thereby differing from the cautious kangaroo with its single or rarely twin offspring.

A pouched animal that makes a more or less

satisfactory household pet is the Wombat, a creature which in shape and size somewhat resembles a month-old bear cub, but with a sluggish deportment that bespeaks a feeble brain. At the time of writing, one of these stodgy little animals shares a cage in the small mammal house with a volatile monkey who habitually uses his affable if heavy-headed stable companion as a pleasure horse.

The pigmy "flying" Phalanger, a small creature which has a habit of parachuting when jumping from branch to branch, thus preventing too rapid a descent, is another Australian marsupial which is occasionally on exhibition in Regent's Park. The head and body of the little animal measures barely two and a half inches in length, whilst the prehensile tail, the hair upon which is arranged in two fringes like the vanes of a feather, is not much longer. The "flying" apparatus consists of a lateral fold of skin which extends from the elbows to the knees on each side of the body. The creature is able to direct its flight with marvellous accuracy for distances of over twenty feet, alighting gently on all fours and closing the parachutes as it settles on the trunk of a tree. Another peculiarity of the "flying" Phalanger lies in the fact that its strongly-clawed toes terminate in adhesive pads, with the result that when once the creature has fastened itself into an object it is only with the

very greatest difficulty that it can be removed. The young are transferred into the abdominal pouch as soon as they are born and there they remain until they are able to look after themselves and indulge in parachute descents without the fear of "crashing."

A marsupial that shares the kangaroo's world-wide fame is the Opossum of America—the only pouched animal inhabiting the New World. Brer 'Possum has a prehensile tail and can climb like a monkey. The young—sometimes as many as seventeen at a birth—are placed by the mother in her "pram pocket" where they are nursed, each little "possum" clinging fast to its particular feeding bottle. When old enough they leave the pouch to mount upon their mother's back, the babies' caudal extremities taking a firm grip round the tail of the parent. Thus established the family may travel up and down the tallest of trees, over walls, or on to the roofs of houses. The opossum, as is well known, is an adept at feigning death, and thanks to this trait has sometimes been shifted at the Zoo from one cage to another with the naked hand. This procedure is, however, not to be recommended as on one occasion the 'possum when least expected "came to" and gave expression to his disapproval of the move by almost biting a finger off the hand of the keeper that held him.

CHAPTER IX

PLEASURE TRAFFIC

MOST adults prefer a Sunday at the Zoo to any other day of the week, a preference, however not usually shared by the youngster, who if given the choice would elect to visit the gardens on a week-day when the broadwalk is devoted, not to a Sabbath calm, but to a cheerful bustle of "pleasure traffic."

Almost every kind of animal capable of bearing a human's weight, or hauling a vehicle has at some time or other been pressed into service of mankind, but at the Zoo only such wild animals are employed whose docility in harness has stood the test of time. For six days a week throughout the greater part of the year the elephants, now mustering some half-dozen, amble sedately from the Old Tunnel to the Lion House and back again beneath their loads of delighted passengers. Exactly when the elephant first bowed his neck to service is a moot point. He was certainly in use as a beast of burden in the Orient many

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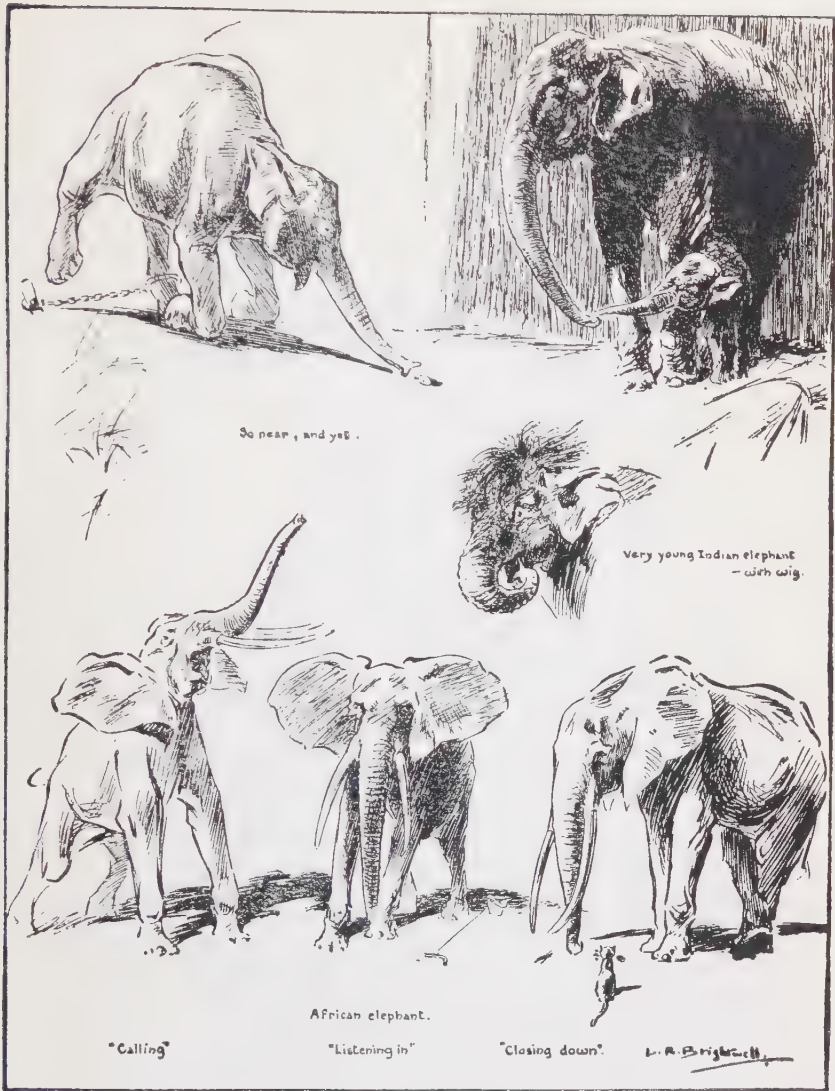
centuries before his dramatic entry into Europe in the van of Hannibal's invading hosts. Indian elephants were formerly the favourites with the Zoo officials, as they were considered more docile. It is now being realized that the African species, whose education has in the past been much neglected, responds almost equally well to proper training methods, and several young specimens, some not bigger than ponies, may on any fine morning be seen at their lessons—dragging a number of long-suffering keepers round the gardens. Jumbo, the famous elephant, came from Africa, and was until his later years quite well-behaved. On occasions elephants that have for years been considered models of good conduct suddenly, for no apparent reason, refuse to obey the orders of their keepers. Thus on a certain recent Good Friday, "Indirani," a fine Indian example which had carried passengers for more than a year, went on strike, refusing to remain still whilst being mounted. As the animal was only stubborn and not vicious, the authorities decided to see whether she would obey a native, and the services of a mahout were obtained through the Asiatic Home. The result of the experiment was extraordinarily successful, for the mahout, without punishing the animal, but merely lecturing her in his native language, obtained within a few days a complete mastery. The mahout, after kneeling down in front of

the elephant and saying a short prayer, addressed the animal as follows : " I am told you eat your food and will not work for it ; it is wrong. Allah enjoins us all that we must work if we want to eat. You are cheating your masters, which is unworthy of you. Put fear out of your mind and fulfil your allotted task." The native was retained for the season, at the end of which time the English keepers had regained perfect control over Indirani, whose conduct has ever since been exemplary. Immediately any of the riding elephants show signs of viciousness they are relegated to a life of idleness in the elephant house. A pair of veterans whose tempers are not as good as they should be are still popular exhibits owing to the manner in which they entertain their visitors by restoring to them the biscuits which strike the bars of their cages and fall out of reach of both themselves and the throwers. The animals point their trunks at the food and proceed to blow it with great power back to the feet of the donors.

Although capable of great speed on occasions the average broadwalk pace for an elephant seldom exceeds two miles an hour, as it is agony for him to pass a paper bag without examining the contents. Some years ago one of the large riding elephants was ambling along collecting all things edible on his route, when he spied what he thought was a well-filled paper bag

lying on the top of a pram. Out shot the trunk of the animal, and, to the horror of the spectators, a sleeping infant was raised into the air to within a foot of his open mouth. The elephant realizing its mistake gently replaced the baby into its pram and continued its leisurely stroll.

During the summer of 1926 a so-called white elephant was exhibited in the gardens. It arrived from Burma accompanied by a normal coloured wife and five native attendants. Only the hairs on the animal were pure white, the skin being flesh-coloured. In Burma and Siam "white" elephants are held in great veneration as emblems of royalty and are still worshipped by the lower classes. Until quite recently the ceremonies attending the capture of such an animal were most impressive. The discoverer of the sacred creature, were he the humblest man in the land, was immediately raised to high rank, paid a large sum of money, and exempted from taxation for the rest of his life. The ropes normally used for securing ordinary elephants were replaced by stout cords of scarlet silk, and the wants of the animal were attended to by princes and mandarins. Feather fans with gold handles were employed to keep the insects from it by day, and elaborately embroidered silk mosquito nets were provided at night. It was fed only out of gold and silver dishes. In the



ELEPHANTS

sixteenth century the natives of Pegu and Siam waged a war for many years over the possession of a white elephant, in the course of which thousands of men and five kings were killed.

Only once previous to the exhibition of the Zoo specimen was an albino elephant brought to England. This was in 1883 when one was exhibited by Barnum, the famous showman, whose agents before receiving the animal were compelled to sign a contract embodying the following clause : " We have sworn before God that we will take the elephant to love, honour, and protect it from misery. If not we know the sin cannot escape hell."

The Zoo's white elephant arrived from Burma at Tilbury docks, where, owing to the state of the tide it could not be walked off the ship. The sacred pink animal had therefore to suffer the indignity of being slung ashore from a crane. Its march from the docks to Regent's Park, accompanied by its wife, the Zoological Society's superintendent, and a retinue of native servants, caused a mild sensation amongst those suddenly confronted with this extraordinary procession. " Pinkie " as the elephant was nicknamed by a flippant public was taken for walks in the Zoo gardens, but in accordance with its semi-sacred character, visitors were not allowed to ride on it.

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Amongst the riding animals, next in popularity after the elephants come the camels—the Bactrian with two humps, and the Arabian or Dromedary with only one hump. As experienced from the saddle or neck their motion is short and choppy, in contrast with that of an elephant which may be described as a slow easy roll like that of a ship in a swell. Two children on the neck, and two between the humps is the average load for the Zoo camels. Their full carrying capacity is approximately 1,500 lbs., but at Regent's Park they have never been confronted with the last straw.

A poor relation of the camel's, conspicuous on the broad walk pulling a pony chaise, is the Llama, who may be described as a sort of camel-sheep. It has been in general use as a beast of burden for many centuries. What the camel is to Arabia the llama is to Peru, where it is employed in thousands to carry merchandise across the Andes. Llamas when less carefully controlled and treated than those at the Zoo leave something to be desired as mounts. They have all the camel's obstinacy, and devilment, and will often signify their unwillingness to advance by turning their heads, confronting the rider with a sullen stare, and then spitting in his face. The llama's power of expectoration is great, the saliva being ejected an extraordinary distance and with great velocity. A certain Zoo llama invariably spat

on the appearance of a visitor wearing a "top" hat. Bowlers, boaters, homburgs, and caps were all regarded by this animal as unobjectionable, but at the sight of a "topper" it "saw red," and a fusilade was promptly opened on the visitor adorned with the offending headgear.

One or two other wild beasts of burden have from time to time graced the broad walk. A reindeer team has recently been installed, and when the snow is on the ground the keeper in charge needs only to dress for the part to recall vividly the romantic equipage of Santa Claus. Zebras have featured once or twice, and several lights of the coaching world in bygone days have astonished the Row by appearing behind one of these "jazz" patterned four-in-hands. A zebra between the shafts makes an extremely smart turn-out, the only drawback being that as a draught animal it has a tendency to bite through its harness, kick the gig to matchwood, and possibly carry the whole outfit through a plate-glass window. The trotting ostrich is less in evidence at Regent's Park than in certain foreign zoos—notably those in South Africa. The ostrich keeps up a very hot pace for a few miles, and is aided in its giant strides by its wings. A story has been told of an ostrich ride in a certain zoo in Holland, which deserves repetition. It appears that one of the service gates had been left open accidentally, and through

this dashed the bird with the visitor on its back at a terrific pace. It was a typically straight road, stretching away into the infinite without a turn to break its awesome monotony. The fare, unable to summon up the nerve to jump, had recourse to shouting for help, which merely encouraged the ostrich to redouble its efforts. The climax was reached when the bird, with its passenger still clinging on, collapsed on the road eight miles from home.

Whilst on the subject of ostriches, it may be mentioned that their formidable digestive powers are only too well known to the public, who at the Zoo have on occasions fed these voracious and inquisitive birds with substances which even the digestion of an ostrich was unable to cope with. Thus some years ago a fine specimen which died a few days after a bank holiday was found to contain 9½d. in coppers. The money was duly credited to the Zoological Society but was a poor recompense for the loss.

The wild African buffalo is justly regarded as being one of the fiercest of all animals, and is consequently treated with the greatest respect, not only by the natives, but by experienced big-game hunters. However, one large specimen, presented to the Zoo by Sir Edward Northey, was kept in a stable at Government House, Nairobi. It not only carried children, but for a time was actually employed in drawing a plough.

On its release from its travelling case on its arrival at Regent's Park, the animal allowed itself to be placidly led through the gardens on a rope to its new quarters in the cattle sheds.

CHAPTER X

AFTER DARK

AT the Zoo the habits and customs of a number of animals that would only be astir in their native haunts after dark may be studied during the daylight hours. The reason is easily explained. Being fed by day, and having consequently nothing better to do at night, they just go to sleep. There are, however, a number of inhabitants of the menagerie that only become active at dusk, and nightfall is to them a signal to wake up and walk abroad. By day these animals may be observed asleep, or may only be represented by illustrated labels, apparently empty cages, or heaps of straw, although a very dull or foggy day may occasionally lure some of them into the open, deluded into thinking that night has come before its proper time. Suitable food is placed within reach just before the last of the day-staff withdraws—and in the morning it is gone. The majority are nocturnal because they find night the best time for hunting, and take advantage of the dim light to steal upon unsuspecting animals

wrapt in slumber. Some have eyes with vertical pupils which can suddenly expand and take in every ray of light available, thus giving them command over many a situation which would baffle the purely diurnal.

Amongst the least civilized members of the monkey tribe, there are a number of curious forms that during the daytime are very retiring in disposition, and strongly resent being hauled out into the light for inspection. Their movements are as strange as their persons, and they are responsible for a great amount of native superstition. Such an animal is the Slow Loris, the "bashful-cat" of the Malays—a creature no larger than a guinea-pig, with a pair of huge, lamp-like eyes, and dainty padded feet. In captivity he is a sleepy little beast, much given to night-walking, and whilst moving with slow deliberation making mesmeric passes with his long lanky limbs. In the Malay States he is a power in the land, and every portion of him, especially the eyes, is valued as a charm or a love potion. His every activity—or want of activity—is believed to have some influence for either good or evil. In Regent's Park he is just *Nycticebus tardigradus*, and regarded as a specially "bad sitter" by the press photographer. The Malays magnanimously excuse his shy and "nervy" manner on the ground that he is always seeing ghosts. His expression certainly appears

a startled one for his eyes look as if they were about to burst out of his head, an outcome of tense and constant peering in the dark for birds' eggs, tree lizards and the other choice items which go to form his menu.

The Tarsier, also an inhabitant of the Malay States, has all the "pop-eyed" appearance of the Loris, but is a much more active animal, hopping from tree to tree like a tree-frog, which it resembles in having toes which are flattened to form discs. In the Aye-Aye monkey of Madagascar we have yet another case of specialization carried to extreme. Very few casual visitors to the Zoo have ever seen the animal alive, although it has been a more or less constant exhibit since the gardens' inception. The aye-aye shuns the light of day and only when the last visitor has left the monkey house does he emerge from his sleeping box, and with a pair of hands that look like two huge five-legged spiders, explores the virginia cork cage fittings in search of insects. Actually he finds himself reduced to eat minced meat, eggs and bread and milk, but the spidery hands are ever ready for the chance cockroach. A few privileged visitors to the Zoo have observed the weird shadowy form of the aye-aye by the light of a pocket lamp, creeping about his cage with slow deliberation, and have heard him utter at intervals the sad far-away cry from which he takes his name. No creature could be more



SLOW-LORIS AND AYE-AYE

perfectly fitted for its way of living than this aberrant member of the monkey tribe. Its huge lamp-like eyes put those of a cat to shame. The head is more like that of a young bear than a monkey; the tail which supplies the perfect balancing pole is bushy and fox-like, and the front teeth are large and chisel-shaped like those of a rat. The feet are, however, undoubtedly simian, for the great toe has a flat nail and is extremely long and slender, and is used by the creature in extracting insects from the cracks in the barks of trees. On dislodging the insects the spidery hands come into action, and with infinite delicacy catch them as they make for the "emergency exit." This long finger is likewise made use of when the animal takes liquid nourishment, for when in the act of drinking he puts his lips to the water, and inserts this finger into his mouth behind the incisor teeth, drawing it rapidly backwards and forwards as the water is sucked up, in the manner of a man cleaning his teeth.

It is small wonder that such an animal has spread an aura of legend and superstition sufficient to make it dreaded by the less enlightened inhabitants of Madagascar. Many weird and horrid rites were once practised in order to counteract the supposed "spell" cast by the aye-aye, which shares much of the Malayan loris's power for "creating an atmosphere."

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Amongst the Zoo carnivores the wolves and hyaenas are animals that without actually turning day into night are more active after than before closing time. The wolf is always impressive, but especially so on a moonlight night, when he possesses a dignity which no quantity of brick-work or iron bars can diminish. A full moon sets all the wolf-dens a-howl, and the animals may be heard on a calm midsummer night as far away as Oxford Circus. Just why they are affected in this sentimental manner, is still a matter for conjecture. The wolves in Regent's Park have a well-earned reputation of being able to forecast a change in the weather from fine to wet, their method of signifying a coming break in the atmospheric conditions taking the form of a prolonged chorus of discordant howls, repeated at short intervals for about twelve hours before the change takes place. Their predictions are almost invariably correct, and the Zoo's head gardener can always rely on a period of wet weather when he hears this frenzied pandemonium during the daytime.

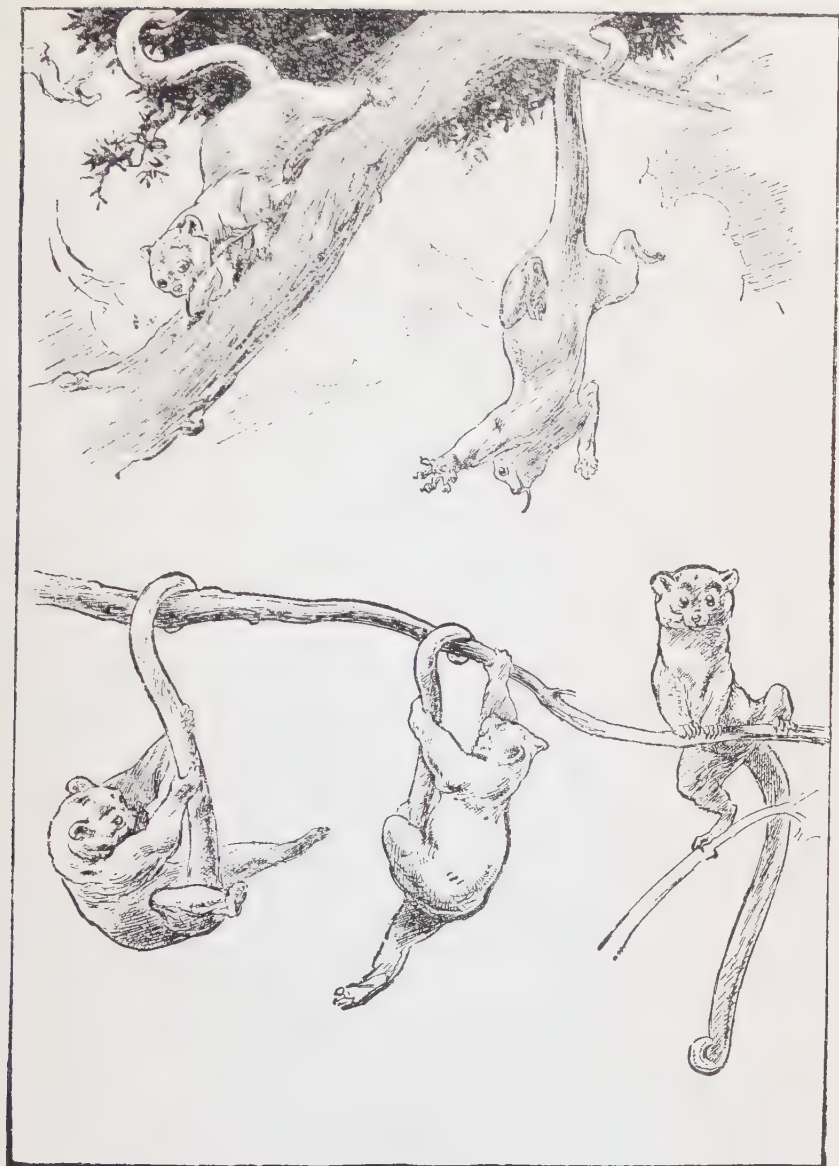
On one occasion not long ago a large timber wolf escaped from its enclosure at night, after biting through the thick wire netting of its cage. It was found wandering far from its habitation the following morning. On chase being given it bolted straight for the Zoo store-yard, where it obligingly took refuge in a travelling

box in which some ostriches had recently arrived.

The Hyaena is known to all, even to those who have never seen him alive, since his fame for "laughing" has become traditional. Actually, of course, the animal's nerve-racking cry is not indicative of mirth but of excitement, and the slightest prospect of a meal is sufficient to excite him to peal upon peal of hysterical cacophony. The hyaena, like the vulture, is a beneficent creature that is seldom given its due—owing to its repulsive habits. There is no doubt however that disease would be more rife that it actually is in certain tropical countries were it not for the scavenging propensities of the hyaenas. The animals' insatiable appetites often extend their activities to inroads upon cemeteries—hence their unpopularity. The hyaena's most striking characteristic, apart from its laugh, is its power of jaw, and at the Zoo it will habitually crack up horse bones discarded by lions, and snap the thick handles of brooms as a man might a match stem. Sometimes this faculty for bone cracking takes a horrible form, trapped hyaenas having been known to gnaw off their hind limbs in order to regain their liberty. Although of a skulking and cowardly temperament—never attacking man save in "mass formation"—hyaenas are quite attractive when young. In the cub-stage they are sometimes adopted as pets. Sooner or later,

however, the hyaena's true character asserts itself, and the growing cub is dispatched in a strong box labelled, "Live animal—With care—The Zoological Society, Regent's Park."

The Kinkajou of British Guiana, a member of the racoon family which when tired of hanging from a branch at the end of its long prehensile tail climbs back, hand over hand, up its caudal appendage; the Fossa of Madagascar, a very fierce creature resembling a giant weasel; and the Badger, are other carnivorous inmates of the gardens, that display special activity after sunset. The badger is specially active at night, and one of these animals, a native of Yorkshire, received at the Zoological Gardens on a certain afternoon in a dull, sleepy condition, escaped from its cage on the very evening of its arrival. A search-party immediately set out but with the light failing soon had to give up. Early the following morning the Marylebone police were advised that a wild and ferocious-looking animal had been observed in their district. A taxi-driver in fact reported that he had chased the creature in his vehicle for several hundreds of yards along Baker Street. The animal was eventually located by a police constable, who was attracted at three o'clock in the morning to the public-house, appropriately named "The Yorkshire Stingo," owing to the exceptionally powerful chorus of feline cries that arose from the neighbourhood



KINKAJOU

of that hostelry. On arrival there, he found the house surrounded by all the stray cats of the neighbourhood, who, with arched backs, were occupied gazing into the area where the badger had taken refuge, and from a safe distance were giving the thoroughly cowed wild animal "a bit of their minds." The constable hastened back to the station and reported the matter to his superior officer. The cats were moved on with commendable promptitude, the Zoo authorities were communicated with and the animal was recaptured. When presenting this adventurous badger to the Zoological Society its donor informed one of the curators that prior to its capture it had walked clean through a pack of foxhounds after injuring several of them.

A large number of rodents are abroad by night, when they are immune from many of their enemies, especially their arch foe—man. Some are sparing drinkers, and subsist for moisture upon dew or succulent vegetation which of course is at its best at night. An undesirable unofficial exhibit which is much in evidence in the Zoo after dusk is the rat, and a keeper accompanied by a number of well-trained terriers, goes round the gardens nearly every night picking off the vermin with a rifle. The various wild animals have become quite accustomed to the shooting, and are unmoved by the shots that may whistle overhead. The anti-rat

staff annually account for a bag of over five thousand.

The beaver does much of his best work at night and if on a "rush job," such as the completion of a lodge, before the advent of winter, will toil on by moonlight or in pitch darkness without offering any comment on the desirability of a shorter working-day.

In the Small Mammal House a number of interesting little rodents get out of bed just as the exit turnstile clicks behind the last visitor. Rats, voles, and mice all become busy, especially the lemming which has made itself dreaded by its periodic migrations. Food is the goal aimed at by these wholesale movements of this animal. Authentic stories are told of these rats moving across leagues of country in the form of a living river, only comparable to the marches of the Central African ants. They surmount all obstacles, eating as they go, and though much harassed by wolves, foxes, stoats, and hawks, eventually reach the sea where thousands find a watery grave. The classic legend of the grain-hoarding bishop who was eaten by rats in a castle on the Rhine is not incredible in the light of some more recent and reliable lemming stories.

The most fascinating of the nocturnal rodents are the little Jerboa rats, represented in the Zoo during the daytime by a sleeping box with a tuft of straw protruding from its entrance. In

size the jerboa compares with a very big dormouse, but has larger ears and is mounted on stilt-like legs, and furnished with a long tail, without which it would fall forwards upon its nose. All the usual movements of a mouse engaged in its toilet are rendered peculiarly grotesque in the case of the jerboa, by reason of the creature's lanky hind quarters and minute fore-limbs. Jerboas are found in Eastern Europe, South-Eastern Asia, and Africa, always frequenting barren sandy wastes with which they harmonize perfectly in colour. They move in a series of long hops—leap following upon leap with lightning rapidity, so that the animal appears to drift over the sand like a piece of wind-blown thistledown. With each leap it is able to cover a distance exceeding twelve times its own length, and only a swift greyhound, cheetah, hawk, or rifle bullet can secure a jerboa when it is in full flight. During the war it was a not uncommon practice to construct desert roads of wire netting, several thicknesses being superimposed one upon the other. The jerboas soon learned that such a road could be used as a roof to their underground passages, and many a predatory bird and beast watched them “so near and yet so far” from the upper side of the road, suffering all the agonies of a Tantalus.

The only jerboa of any size is the so-called Cape Jumping Hare, which resembles a hare

with kangaroo-like hind quarters. It lives, and may continue to live, in South Africa, until stamped out as a foe to agriculture.

Porcupines are often abroad by day but show to best advantage at night. They are mostly powerfully built burrowing animals of typical "guinea pig" form, but sometimes they attain the size of a large cat, and they invariably have the upper portion of their coats covered with stout bristles or spines, some of which may attain a length of eighteen inches. The spines are an effective defence against most of its enemies, and early natural histories recount how the "porcu-pig" shoots its quills like arrows at its foe. What actually happens is this: By a contraction of the skin, the spines are made to stand erect suddenly with a loud rattling sound, and the effort dislodges old quills, the roots of which have withered. Thus it happens that a dog or even a leopard sometimes carries away a bouquet of quills in his nose, and more than one keeper has temporarily retired from the public gaze with a flight of cast-off spines embedded in his ankle. Some of the quills, especially those of the tail, are hollow, and when shaken give out a shrill, musical "whirring" sound, which is believed to act not only as a danger signal but also as a "love call." The big Indian porcupine is the best-known form. It is a handsome beast, the dorsal quills being banded alternately with



JERBOAS AND PORCUPINE

black and white. Tropical America knows three species of tree porcupine, and examples of these may often be seen in one or other of the small mammal houses. The spines are mixed with black hairs and climbing is facilitated by the provision of a long prehensile tail.

Another interesting nocturnal rodent is the Viscacha of the Argentine pampas. Many animals, as we know, have the hoarding instinct largely developed, but in the animal in question the collecting mania is carried to quite amazing lengths. Viscachas live in companies of twenty to fifty, constructing underground "villages" of complex architecture. Safe in their subterranean fortifications they intimidate predatory beasts above ground by terrific growlings utterly disproportionate to the size of the animal emitting them, and which have been compared to those of a bear. The most striking feature of the "viscacherie" is, however, the remarkable collection of oddments, which is arranged on the top of the mound covering the "village." The bones of cattle and dogs, thistle tops, nuts, shells, eggs, seeds of all kinds, watches, spurs, whips, buttons, and cigarette ends, have all been collected from such sites. The object of this collection of quite useless "treasures" is yet to seek.

Amongst the insectivores, the majority of which are nocturnal, the Cobego or Flying Lemur is the most interesting of all those that have been

inmates of the Zoo. Like the flying squirrels and phalangers it is furnished with a skinny membrane, stretching from knee to elbow, by means of which it parachutes or planes from tree to tree in a downward direction. The animal which prefers fruit and leaves to insects, has been recorded to have covered over seventy yards at a single leap. It produces but a single young one at birth, the newly-born aeronaut riding spread-eagled upon its mother's back.

A common native insectivore sometimes housed in the gardens (but which does not take to captivity kindly) is the diminutive Common Shrew. It is a mixed feeder relying chiefly upon insects but sometimes raiding bird nests, and often attacking worms three times its own length. It breeds in the autumn, notifying the fact by littering country roads with its dead, slain in battle. The insectivores although inconspicuous and modest beasts seldom stirring abroad in the publicity of daylight hold several of the world's records. The Pigmy Shrew of this country is the smallest mammal known, measuring no more than two inches from snout to tail; the tailless Tenrec of Madagascar is the most prolific, producing twenty or more young in a single litter, whilst the mole is the most expert miner.

Amongst the Bats the large fruit-bats or "flying foxes" of India are easily exhibited in captivity. At night—or on a dull day—the bat



FRUIT BATS

collection wakes up and performs extraordinary antics, when they engage in fierce arguments with each other over the dinner-table. In their native haunts they provide the stranger with one of the evening sights, as bat after bat alights upon some specially desirable tree. Their fights to secure the most comfortable places from which to "strap hang" — head downwards—are responsible for a greater uproar than has ever been emitted from any rookery. The Fruit-bat does a good deal of damage to crops but the native farmer gets his own back for the animal is good eating and is regarded as a delicacy in many parts of India.

Although a certain number of bats are a menace to agriculture, and a few known as vampire-bats are addicted to blood-sucking habits, the majority do a vast amount of good, devouring quantities of disease-carrying insects. Owing however to their goblin forms, uncanny movements, and nocturnal habits they are sorely misunderstood, and it is impossible to persuade the general run of mankind that they are up to any good. This is specially the case in country districts where the "flitter mouse" is still the subject of foolish legends, and die-hard traditions. The bat himself, happily unconscious of the fear he inspires pursues his way of life, and does a vast amount of good. The creature stands high in the scale of life, his so-called wings being merely hands with greatly

attenuated fingers, with the web between each digit exaggerated to form an effective plane. His sense of touch is developed to an extraordinary extent, the wing membranes and the various leaf-like developments of the face being highly charged with nerves, which at once apprise him of any obstacle in the immediate vicinity.

The Sloths, Ant-Eaters, and Armadillos are all more or less nocturnal animals, characterized by having no front teeth. The South American leaf-eating sloths are amongst the most arboreal of animals, spending almost their entire existence in trees from which they hang back downwards with their faces perpetually directed skywards, clinging on with their enormous claws which serve them as grappling irons. If placed on the ground "right side up" they are all but helpless and drag themselves about in a purposeless fashion painful to behold. The sloth has been a byword for sluggishness and the average good day's march for one of these animals amounts to less than a hundred yards. Compelled by circumstances, however, it can move at an astounding pace along the branches of trees. It is likewise a good swimmer and can cover a mile of water in half an hour. Asleep it invariably rolls itself up into a ball when it is said to be quite inconspicuous, harmonizing with the huge curtain-like festoons of lichens draping the forest trees. The only sound it ever utters is a bleating cry,

which under the stimulus of pain or fear rises to a prolonged wail or moan. Although sloths seldom live long in captivity, in their native forests they are said to attain a very old age, surviving severe injuries from their enemies the jaguars, harpy eagles, and boa constrictors.

The Armadillo of Central and South America bears a quaint superficial resemblance to the common garden wood mouse. It is a very nocturnal animal, but may often be seen to advantage at the Zoo on a dull day. Its hair is strangely modified to form overlapping plates, arranged in bands, so that the entire creature is enclosed in a plastic and very efficient suit of mail. In some cases the plates covering the chest and shoulders are united to form a bony cape, whilst usually many true hairs are dispersed over the body, between the armour joints. The major portion of the under surface is hairy. In some extinct armadillos of Patagonia the armour was formed of a single piece, much like that of a tortoise, and must have looked decidedly impressive when carried about by a creature nearly as large as a rhinoceros.

Armadillos are greatly addicted to burrowing, and certain parts of the Pampas are said to resemble a gigantic gruyere cheese, thanks to the house-hunting efforts of these animals. They are kindly disposed omnivorous creatures, and in captivity can be let loose in the same run with

animals of widely different natures such as monkeys and squirrels.

The Ant-eaters are represented by three species, of which the largest is the Giant Ant-eater of the swampy forest regions of Central and South America, an animal adapted solely to the destruction of ant nests and the extermination of their occupants. At a hasty glance it appears to be a jumble of skunk, bear, and bird. It has the skunk's overwhelming tail, bruin's clumsy body and massive limbs, whilst its long pointed head is more suggestive of that of a bird than a mammal's. Yet, wild anomaly as it would appear, after only a superficial survey, every portion of this strange beast is beautifully "in tune" with its surroundings and notions of happiness. Hundreds of thousands of years spent sucking rather than chewing food have resulted in the ant-eater's lips becoming fused together until a mere key-hole opening is left, just large enough for the extrusion of its long whip-like tongue. There is not a vestige of a tooth throughout its foot-long jaw-bones. When a meal is desired the ant-eater makes for one of the mountainous communal nests of the white ant and besieges it with his powerful fore-claws. This is a "notice to quit" for the panic-stricken inhabitants, and they pour forth, only to be met with by a long lashing tongue. Such as adhere to it—for it is covered with a sticky saliva—find a last resting-



GIANT ANT-EATER

place in the ant-eater's interior. The ant-eater's flesh is said to be very palatable, but jaguars and dogs rarely attempt to attack him more than once, for his huge hug is as deadly efficient as that of a bear. Man, however, with rifles and poisoned arrows is fast exterminating this strange beast which does an immense amount of good in an ant-ridden land. The ant-eater is normally nocturnal and much given to keeping itself to itself. The single offspring, a miniature replica of the mother, is carried for a time on the parent's back, and has been reared in semi-captivity at a research station in South America.

Zoo ant-eaters are usually mild and inoffensive, and do well on a diet of milk, eggs, boiled fish or finely-shredded raw beef. They are clumsily playful in each other's society, but show little or no special friendliness towards their keepers. Brain is not the ant-eater's strong point. His crowning glory is his tail which serves him as a sunshade by day and a blanket by night. His voice is a feeble mew, becoming harsh and strident under the stress of great emotion. The late Frank Buckland, when curator at the Zoo, once took a full-grown ant-eater to the gardens in a four-wheeler. An argument arose *en route* and the redoubtable naturalist, although a man of huge proportions, eventually staggered from the vehicle with very decided views on the subject of his charge's power of embrace.

The Aard-Vark or Earth-Bear of the sandy wastes of South Africa, is another large nocturnal animal, devoid of front teeth, which has frequently been an inmate of the Zoo. In general appearance the creature resembles the ant-eaters, but its tough skin is but sparsely covered with hair, and its long, narrow head with large, pointed ears terminates in a pig-like snout. Its tunnelling feats are remarkable, and to see it literally dive into the solid earth, forging ahead with its fore-feet, and flinging the slack behind with its nether limbs at a rate that two hefty men armed with shovels would be unable to keep pace with, is a sight not easily forgotten. It lives almost entirely upon white ants, tearing down the insects' towering earth castles, and licking up the panic-stricken termites with its whip-like tongue. At the Zoo, where it is fed on finely chopped-up meat, it lives half buried in the earth during the daytime. It shows itself, however, a very lively beast after dark when it will run and even jump in a clumsy fashion, and has swept more than one keeper off his feet with a single blow of its long cylindrical tail. At the Pretoria Zoo a dog-cart puts out twice a week for the sandy wastes in the neighbourhood, and brings back in a zinc tank a consignment of termites for their dozen or so "earth-bears" who combine monastic seclusion with a love of good living.

The last of the nocturnal mammals to come under review in this chapter are those known as monotremes. They might be described as "Bird-Beasts," for they resemble birds in not only having a very low blood temperature, but also in the fact that they lay eggs. They are, however, true if primitive mammals, for they suckle their young, and their bodies are covered with mammalian fur or spines.

The best-known of the group of egg-laying mammals is the Duck-Billed Platypus of Tasmania and Australia, in which the muzzle is produced to form a broad skinny beak. Its body is covered with fur, and the toes of the feet are webbed. Being prized for its flesh and fur it is fast becoming extinct, but of late years several have been exhibited in Sydney, and one lived for a very short time in the New York Zoo. The latter specimen which cost the authorities £600, was exhibited for one hour only per day, but even this amount of publicity apparently proved too much for it.

In the wild the duck-bill is a shy little beast rather like an otter in shape, and with all the otter's skill and agility as a swimmer. Duck-mole is one of its popular names, since it excavates burrows, twenty feet in length in the stream banks. There are two exits, one above the water line and one below it. At the end of the burrow, cunningly blocked at intervals with mud plugs,

is a round chamber in which a bird-like nest is built. Here the round white eggs—usually two in number, are laid and hatched. The newly-born young are blind, naked, and all but shapeless. But teeth are present, and in both sexes there is on each hind-foot a spur connected with a poison gland. When able to run about they are said to make the most delightful pets, romping about like kittens, and never attempting to use their spurs—retained in maturity only by the male.

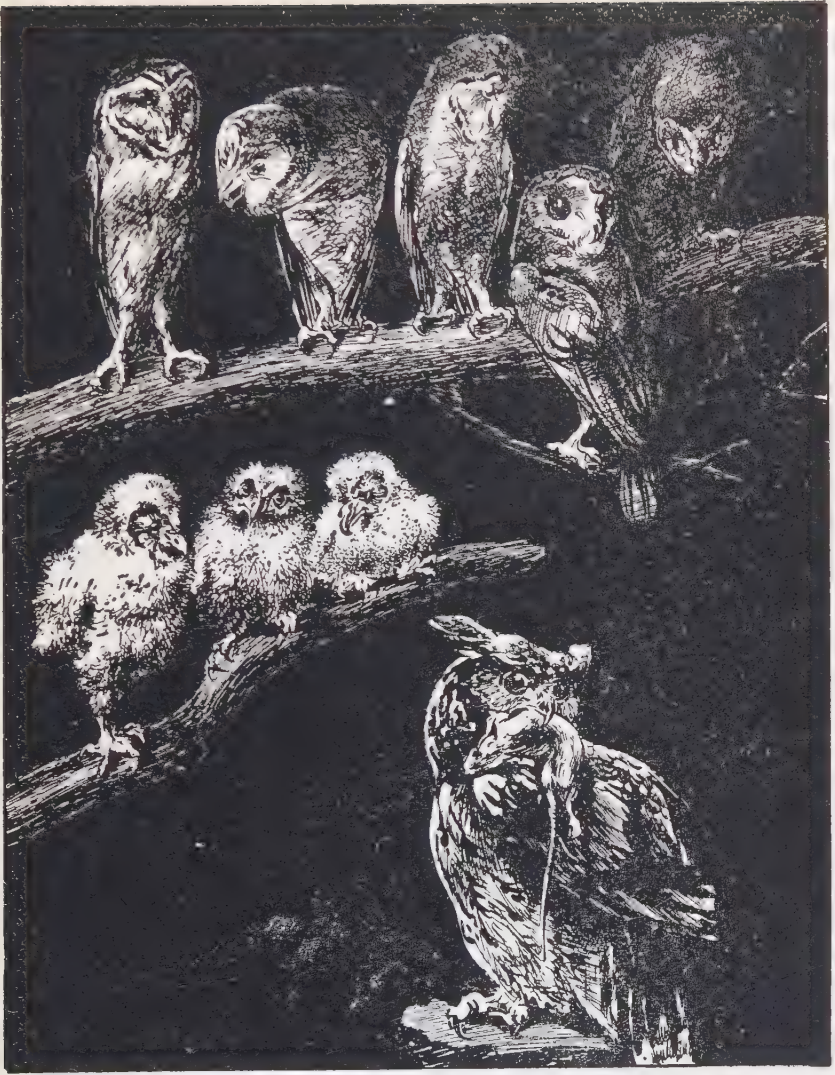
The spiny Porcupine-Ant-Eaters or Echidnas, one species of which hails from Tasmania, and the other from Papua, are other egg-laying mammals. They take more kindly to captivity than the duck-bills, and a large New Guinea specimen, which owing to its thoroughly nocturnal habits never emerges from its sleeping box during the daytime—unless hauled out for inspection by its keeper—has been an inmate of the Rodent House in our gardens for the past nineteen years. Like their duck-billed relative they are addicted to burrowing habits, but differ in being essentially terrestrial, and instead of eating fresh-water molluscs they dig up ant-hills, licking up the insects with their long worm-like tongues. When attacked or feeling shy they at once roll up, hedgehog fashion, and present formidable “battle-backs” to the intruder. Whereas the duck-bill can relieve its feelings in

a feeble growl, the echidna when disturbed merely hisses in a snake-like fashion.

There is no more interesting exhibit at the Zoo than that remarkable avian, inhabitant of New Zealand, called the Kiwi, the wings of which, hidden beneath very coarse hair-like feathers, are reduced to such small proportions as to be quite useless for the purpose of flight. Unfortunately night is the time to see the kiwi, for in the Zoo he sleeps by day hidden under a thick pile of straw. What the kiwi lacks in wings he gains in having very long legs with which he can run at a very high speed when alarmed. Usually, however, he creeps about in a burglar-like fashion, and with his long slender bill, which bears at its tip a pair of highly sensitive nostrils, searches for worms and beetles with a fussy sniffing noise recalling that of our home-grown hedgehog. The feet of the bird are very massive, and with them he stamps upon the ground, and induces the worms to come to the surface, deluded into thinking that rain is falling. In the mating season the married kiwis are very retiring in their habits, but the family cares once over they become more sociable and congregate in small flocks. The nest is a round chamber at the end of a long burrow and is roughly upholstered with grass. In it two eggs are laid. They are enormous for a bird no larger than a domestic fowl, being each equal to a quarter of the layer's

own weight. The cock takes upon himself all the domestic and nursing duties, and during this time gives vent to his emotions in a loud note from which the bird's name is derived. Being much esteemed for food by the Maoris, the kiwis are fast joining the other larger wingless birds in their extinction, and are retreating to the densest scrub upon the mountain slopes.

Owls are other night-birds that the Zoo public sees under a disadvantage, for during the day-time they sit on their perches almost motionless, and attempt to impress the visitors by a dignity of manner which they carry to such excess as to appear almost ludicrous. The owl's eyes, like those of cats, are provided with vertical pupils, which expand at night, when the birds become full of purpose, and would, if given their liberty, be only too willing to assist the official rat-catchers. By day they are open to persecution by small birds, but at night have on occasions been known to attack man. All owls are by nature fierce and savage, and in captivity the greatest tact and kindness will seldom render them well-disposed towards their owners. Owls build upon the edges of inaccessible cliffs, in rock fissures, caverns, dense pine forests, and such ready-made snuggeries as disused chimnies, belfries, and barns. The eggs are laid at intervals, many days often elapsing before the entire clutch is laid. It happens, therefore, that the



OWLS

young do not all see light at once, and one may frequently find a brood of young owls nicely graduated from the chick of only a few hours old to a comparative veteran of at least ten days who has helped in the incubation of his younger brothers and sisters. The owl is perfectly adapted to enjoy its particular way of life, for its thick, soft plumage enables it to cleave the air without a sound and to descend upon its quarry with the sudden stealth of a cat. The four tiger-clawed toes are so jointed that they can form two opposable pairs—a four-pronged grappling-iron that at once transfixes any animal it strikes. When a small creature such as a rat or mouse is the victim, the two pairs of claws enter it from opposite sides, and meeting in the heart render death instantaneous and the carrying away of the body an easy matter. Owls have a curious habit of regurgitating the more solid portions of their meals, bringing up the bones of mouse, bird, and fish in the form of dry pellets. Thus the discerning visitor when reviewing the Zoo owls may, by an examination of the pellets littering the cage, ascertain at a glance the nature of the last meal enjoyed. These pellets form a bedding, warm no doubt, but unsavoury. At the Smithsonian Institute seven hundred owl pellets were analysed recently. They yielded the remains of 1,596 mice, 140 rats, 60 shrews, and 40 other small mammals, and a few birds.

To this day the owl is in many countries regarded with superstitious dread and accredited with all kinds of black magic. Its nocturnal habits and especially its voice are partly responsible for this. The harsh screech of the barn owl, the deep hoot of the eagle owl, and the loud "tu-whit-tu-whoo" of the tawny owl, all ring somewhat eerily on a still night, even to educated ears.

One of the largest of owls is the Eagle Owl of Europe, which has been known to kill fawns and is very destructive to rabbits and hares. One of the smallest is the little American burrowing owl. Many pretty stories are told of the communistic spirit displayed by the bird, for prairie marmots and rattlesnakes are said to share amicably the same burrow with it. Actually this apparent instance of communism—like certain other experiments of its kind—makes for anything but Utopia. The owls and snakes certainly billet themselves upon the prairie marmot, but there is little love lost. The owls take toll of the baby marmots, and occasionally young snakes; the marmot varies his diet of roots with a dish of owls' eggs; and the snake helps himself to birds or beasts as his appetite dictates.

A quaint group of nocturnal birds, somewhat resembling the owls in plumage, and closely akin in many other ways, is represented in Regent's Park by the Nightjars and Frog-Mouths. The latter

present such an enormous gape that their mouths threaten to meet at the back of their heads. They occur in New Guinea, Malay and Australia, and feed at night on mantis and locusts, which being diurnal are seized and given a rude awakening. During the daytime frog-mouths sleep so soundly that they can be lifted from their roosts without awakening from their slumbers.

A certain number of snakes are slightly more restive at night than by day. With the exception of these, of the geckos, certain toads, and the blind cave-newts of Carniola, very few of the inhabitants of the Reptile House are specially lively after closing time. The gecko lizards—natives of nearly all warm parts of the world—are interesting to watch when disturbed by the light of a torch. During the daytime they seldom move from the walls or glass panes of their cages to which they remain attached by means of the adhesive pads with which their feet are provided. They are entirely different animals at night, however, when they display as much activity as do the wall lizards on a bright summer afternoon. Many geckos are arboreal, living in the bark of trees by day, whilst a large number frequent houses. The different species of house geckos keep themselves very much to themselves, and Col. Tyler has observed in India that the dark cellars may be the resort of one species, the roof of another, while the crevices in the walls

may be exclusively occupied by a third species. However, at night they issue forth in quest of insects and may be found mixed up together in the same spot ; but on the slightest disturbance, or when they have done feeding, they return hurriedly to their particular hiding places.

Do fish sleep ? This is a question that is continually being asked, and the correct reply is that whilst a number never appear to rest, a few most certainly do so. Shortly after closing time some of the inhabitants of the Aquarium such as the thoroughly nocturnal cat-fish awake from their slumbers ; others, however, when no one is present to admire them, retire to rest. The perch, gay and sportive by day, sink to the bottom of their tank, and fall asleep resting on the ground in an uncomfortable, upright position. The wrasses not only seek the aquarium floor at night but lie flat on their sides, a habit which when indulged in by a somnolent specimen in the daytime has prompted a host of well-meaning visitors to inform the long-suffering keeper on duty that the fish is dead.

CHAPTER XI

SPRINGTIME

THE spring is the accepted time for the majority of animals to search for a mate, and, having succeeded in the quest, to start house-keeping in earnest. The Zoo is consequently in the spring a resort of special interest to the visitor seeking instruction as well as entertainment. From March onwards until early June the gardens are aglow with activity, and on all sides the "life force" is expressed with often indescribable beauty and not a little romance. From the spectacular point of view the mammals are far behind the birds and fishes in their love-making, but still no one can watch a lion seeking to ingratiate himself with his lady without admitting that his courtship has a charm and dignity of its own. Spring is of course the time for donning lighter clothing. At the Zoo this is done very gradually, and as the influence of the sun begins to make itself felt one may see at all hours of the day wisps and even bundles of hair drifting about the gardens. The camels, deer, bison, bears, and

wolves are all thinking of their new summer suitings, and at this season the zoo sparrows, obsessed with their housing problems, seize upon the cast-off clothing with alacrity. All the northern mammals change their thick winter coats for lighter garments as the air becomes more genial, and they are, it must be admitted, far from decorative in the process. The majority change their furs merely for the sake of comfort, but a few do so for a more subtle reason—camouflage. They must change colour in order to match the landscape, lest they become fatally conspicuous. This is so with the arctic fox, the mountain hare, and the ptarmigan. As in their native land the snow recedes, and discloses brown rocks and grey heather roots, so these creatures change fur or feather to blend with their surroundings. Nature's laws are not easily repealed, although there is no need for camouflage in the sheltered security of Regent's Park menagerie. The deer not only shed their coats but also their antlers. Every spring sees the proud wapiti and a host of other bucks shorn of the branching horns which lent them so much dignity during the summer and winter. A deer in good health sheds both antlers in a night, but if a little "off colour" may present a lop-sided head-dress for several days. When he is quite defenceless his better half, with, perhaps the memory of past bullying behind her, may take advantage of his

helpless state. But not for long, as the new antlers begin to sprout almost immediately. At first, although protected by a thick "velvet," they are very sensitive, being highly charged with blood-vessels. As the summer approaches the blood recedes, the velvet peels away in strips, and the antlers stand revealed as many branched, iron-hard weapons with which their owner will fight for his lady-love later in the year.

Spring is the season when a number of animals that lie up during the winter in a semi-dormant condition awake from their long sleep and entertain the visitors by their antics. The Alpine Marmots, for instance—curious little rodents characterized by their fat rounded bodies and long tails—spend the whole winter in profound slumber. They live in deep burrows and their sleep is unbroken from November to April. In the wild state they collect in large companies on mountain slopes, each colony having a sentry posted to give warning of impending danger. At the smallest cause for alarm the sentry gives a piercing whistle-like scream, which is taken up by the other sentries, whereupon all the marmots take cover in their burrows. The European tortoises likewise dig themselves in late in the year when the weather becomes unfavourable, and do not reappear until about the middle of April. Even the two-hundred-year-old giant tortoises which are kept at a temperature of over

seventy degrees throughout the winter show marked activity in the spring when they begin to take a lively interest in their visitors, begging from those provided with buns and cake, an untortoise-like diet for which these giants have recently developed a liking. Spring is likewise the time when many of the Zoo animals know the joys and troubles of family life. It is amongst the birds that the greatest activity is displayed, and amongst the majority there is an outbreak of brilliant colouring, voluptuous song, and extravagant deportment. Even the sparrows are less dowdy and more pugnacious than usual. In every bird-house and aviary courtship is in full swing. With the finches and parrots it takes the form of pretty flirtations and flutterings on the part of the males, but in some forms, such as the pheasants, it is carried to more Elizabethan lengths. The strange performances of the male golden pheasant, the most magnificent representative of his tribe, are specially beautiful and entertaining ; for, whilst dancing round and round his "intended," he expands his bright orange, yellow, scarlet, and blue feathers thereby presenting one of the most brilliant sights to be seen in nature. In May the fights between the male ruffs in the wader's aviary attract attention. In these combats the birds stand with their shield-like ruff of feather on the neck erected, and thrust at one another with their long, sharp



CASSOWARY'S LOVE-DANCE

bills. Although appearing exceedingly ferocious these duels for the possession of the females result in little real damage.

The advent of spring causes great excitement in the ostrich house. In April the emus and cassowaries may be observed performing their frenzied love dance, a wild fandango noticeable for the "high kicks" which are indulged in by the males with such "go" as frequently to result in their falling over on their backs. The females are as a rule much larger birds than their admirers, and usually receive these vigorous attentions—at least in public—with the most supreme indifference. The love affairs of the ostrich take place later than the other inhabitants of the house and are not in full swing until the middle of May. He may then be seen bent almost double, until the head and the tail feathers almost touch. The wings are at the same time fully extended, and the swain gives vent to his feelings by emitting a hoarse roar, a demonstration which has the dual object of pleasing the lady and inciting any rival males to combat.

Ostriches frequently lay eggs in Regent's Park, but no success has as yet been achieved in hatching them. The mother is often hopelessly clumsy and has often been observed to tread on her egg and smash it.

The spring affects many of the Zoo birds from both jungle and desert. A few, however, refuse

to be inspired to song or dance so early in the year, and await their own native spring—our autumn—before giving way to their emotions. It is not, for instance, until late in September that the æsthetic Australian bower birds start building their bowers, in which they perform their elaborate and ceremonious courtships. There are several species of bower bird, and each has its particular idea of what constitutes the ideal bower, and rigidly upholds the traditions of family architecture. In its construction one species may make use of nothing but sheep's wool and cotton seeds ; another may prefer feathers, shells, or pebbles, whilst yet a third may delight in flowers, which, when withered, are immediately renewed. In a corner outside the reptile house is a pond in which the eggs and tadpoles of our common frog and toad are exhibited in the spring. The eggs of the former are obtainable usually towards the end of March, those of the latter at least a fortnight later. Unlike the frog which will deposit its eggs in any pool or puddle, even in those which are almost certain to dry up before the tadpoles have begun to develop, the toad in the wild state takes the greatest trouble in choosing a locality and will travel long distances, surmounting every conceivable obstacle to reach a special pond the " rendezvous " of all the toads for miles round.

In spite of the fact that this Zoo pond is used

as a receptacle for paper bags and orange peel by a particular type of visitor, it must answer the requirements of our common toad, for not only do its eggs hatch out but in it the majority of the tadpoles successfully complete their metamorphosis.

Although the inmates of the aquarium are for the most part silent, they are very susceptible to the influence of spring and almost every tank is stirred to its depths. The great majority of the fish take on brighter colours at this season, especially the males, and everywhere is to be seen in progress courtship, bitter rivalry, conquest, defeat, house-building and home-making. The quaintest examples of home-making are to be observed in the tropical hall. The gaudy perch-like South American and African fish called cichlids are frantically busy providing suitable chambers for the protection of their prospective young. The nest or nursery is the work of both parents and takes the form of a deep circular depression in the sand in which the eggs are laid. In the construction of these nurseries the fish take up mouthfuls of sand which are dumped in the neighbourhood. Unfortunately it often happens that two sets of newly-wedded cichlids elect to keep house side by side. The natural tendency is of course to dump the rubbish no further than is absolutely necessary. What can be easier than to pitch it

into the pit just over the garden wall? The people next door retaliate, and the situation rapidly becomes tense for neither nest makes headway in proportion to the labour devoted to it. It is not difficult to guess that it is only a question of days before the neighbours come to open warfare. Under peaceful conditions the cichlids bring up their family in the parental pit, jealously guarding their offspring. Not until the baby fish are several weeks old are they allowed to stray far from home. Should they attempt to do so they are brought back at once—held securely in the parental mouth.

The habit of sheltering baby in the mouth is carried to extremes by the mother of a Nile cichlid which harbours the eggs, and, for the first few days after hatching, the young, in her mouth.

Another aquarium nest-builder who has a busy time in the spring is the Chinese paradise fish. To the male falls the major portion of the parental duties for not only does he build the nest which consists entirely of sticky bubbles blown on the surface of the water, forming a foaming pancake, but he collects the eggs on their being laid into his mouth, and carries them, one by one, to this curious floating home to which they adhere. The mother if given the opportunity would devour the eggs. So highly developed, however, is the paternal instinct, that

the father not only watches over his bubbly abode until the young hatch out, but for several weeks after protects his offspring from their cannibalistic mother.

A good deal of excitement prevails at this season in the cold fresh-water tanks. The trout sometimes elect to form depressions in the gravel at the bottom of their aquarium, the pike in their love-making are apt to disfigure one another by their bites, and the sticklebacks become unusually beautiful and active. The male of the common three-spined stickleback, or "tiddler" as he is better known to the juvenile angler of the London parks, assumes a dazzling livery of emerald green, blue and crimson, and builds barrel-shaped nests formed of tufts and weeds, cemented together by a gum which he secretes from his kidneys. Once the nest is formed he sets out in search of suitable wives, a procedure which leads to the most terrific battles amongst the rival suitors. The wives are in turn, more by force than persuasion, led to the nest, where the eggs deposited are defended against all comers by the polygamous husband.

CHAPTER XII

BIRDS OF PREY

To keep an eagle in captivity and at the same time to accommodate him with sufficient range to exhibit properly his tremendous powers of flight is beyond the scope of the most perfect zoo. At the same time we need not lavish too much sympathy on the bird as he is an exceptionally lazy creature and so long as regular meals are forthcoming is contented with his lot—wherever it may be.

The eagle is to the avian world what the lion is to the mammalian. He is represented as a device to express heroics, and has been exploited on thousands of occasions by story-tellers, ballad-mongers, inn-keepers, and the college of heralds.

Eagles enjoy a world-wide distribution and normally haunt high cliffs and mountain ranges. As a rule they bring up their young in spartan fashion, seated on the cold stone amid a very unkingly mess of hare bones and other debris. The only eagle which can be considered a native of the British Isles is the Golden Eagle, which



EAGLES

breeds regularly in the Scottish Highlands. It is very rarely seen in England. A specimen recently presented to the London Zoo was, however, found in Lincolnshire. It was captured under somewhat mysterious conditions. According to its captor it had been seen flying in the neighbourhood at a great height for a fortnight prior to being picked up in a more or less dazed condition following the firing of a gun. It was at first supposed that the bird had been shot, but on examination it showed no signs of injury. The golden eagle is a very long-lived animal, there being a record of a specimen thriving in captivity for one hundred and four years.

Hair-raising adventure stories of eagles carrying off infants and lambs have multiplied apace before and since the classic legend of Ganymede. The eagle of fact is usually content with hares and game birds, and will in confinement readily accept a cut from the joint. The King of birds even shows some capacity for semi-domestication and the Zoo keepers enter the eagles' cages many times daily and are never armed with any more deadly weapons than broomsticks and pails. When it is found necessary to remove an eagle from one cage to another two keepers advance upon the bird, cover its head with a hood, and quite calmly proceed to take control of the wings.

Zoo eagles occasionally vary their diet with

a few live rats. A youthful and unsophisticated rat sometimes enters the cages, and runs the gauntlet of half a dozen before being pounced upon. All the eagles are so uniformly picturesque that it is difficult to pick upon any demanding special notice. The largest is the rare so-called monkey-eating eagle of Brazil, which is said to prey upon monkeys and sloths. It has only once been exhibited in captivity, and that once at Regent's Park.

To the utilitarian, the vulture is a vastly more interesting bird than the eagle. He however seldom gets his due as a first-class sanitary inspector, owing to his necessarily unsavoury habits and repellent appearance. His head, neck and feet are bare, a cleanly provision of nature, since the bird in the course of its scavenging would soon befoul any feathering liable to be brought into contact with a putrefying corpse. Vultures abound in the hot desert countries, and subsist entirely upon carrion. A large animal suddenly meeting its death on the scorching wastes of Egypt, the Karoo, or the veldt is reduced to a skeleton by the vultures in a few hours. Vultures contrive to congregate together much as sea-gulls do when following a fishing fleet. The vulture soars high in the air, sweeping all below it with its eyes. On seeing another of its kind flying purposefully in a given direction it at once follows. The other vulture is of course following

in his turn another vulture, who is in the wake of a colleague who has sighted a meal. Thus within half an hour of the first vulture notifying a find, hundreds of birds meet in a struggling mass of beaks and claws, and at once remove a public nuisance, which if left to decay might spread disease and pestilence throughout a large area. The ancient Egyptians were quick to recognize the vulture's worth, and went so far as actually to deify the creature.

Only two vultures, both natives of South America, can lay claim to any natural beauty. They are the King Vulture, and the huge Condor which has an extent of wing of over twelve feet. The "King" has a scarlet head and an orange wattle, whilst the condor hides its raw-looking neck in a snowy Elizabethan ruff.

Between the true eagles and vultures proper are all kinds of intermediary forms, and no region tropical, temperate, or arctic, is without its so-called birds of prey. A typical intermediary is the Osprey, a regular visitor to Scotland which lives exclusively on the fish it marks down whilst soaring at a great height and seizes in its claws after striking the water with terrific force. A conservative bird, it comes year after year to the same site where it superimposes a fresh layer of building material composed of tree branches, offal, bird lime, etc., upon the remains of the previous year's nest. In this way a structure

imposing but evil-smelling is gradually raised, and many instances are recorded of nests that in the course of years have towered ten feet or more above the tree-tops—eventually succumbing to an exceptionally violent gale.

As a rule birds of prey do not breed in captivity. At the Zoo the Egyptian vultures often indulge in nest building, and even lay, but the eggs have unfortunately never been hatched.

The Secretary Bird of South Africa is an imposing creature standing as high as a large crane, and derives its name from its tail feathers which resemble a bunch of pens. For many years it was a bone of contention amongst naturalists as to whether the creature should be classed with the cariamas of Brazil, or with some extinct feathered giants that once haunted the plains of Patagonia. In recent years the conclusion has been reached that the “secretary” is a bird of prey—virtually a vulture on stilts, combining the power of an eagle with the legs of a stork.

Comporting himself with an exaggerated dignity well in keeping with his Napoleonic eye and Cæsarian nose, the secretary goes where others fear to tread, for he is one of the few birds that can stand up to a snake. Although willing to eat carrion on occasions, he is pre-eminently a serpent-slayer, and as such has enjoyed immunity throughout South Africa. In dealing with such deadly foes as puff-adders or cobras he is very



SECRETARY-BIRD

wary, and approaches his victims by means of an ever-contracting series of concentric circles. He makes this spiral circuit with a dignified high-stepping action, prepared to strike at a moment's notice. At the same time his great wings are in readiness to act as shields, or even to serve as weapons, for each has a sharp bony knob situated on the joints. Little by little the secretary decreases his distance between himself and his quarry, and then suddenly, when just within striking distance, deals a lightning death-blow with one of his hammer-like feet. After a brief interlude has elapsed, and when the bird has made certain that its victim is dead, the dreaded reptile is swallowed whole. Despite his dignified appearance, his home is but a slovenly built structure composed of a few dead branches piled up in some bush a few feet from the ground. Here the lady secretary lays two or three large eggs, which in time yield budding secretaries—the most grotesque scraps of life that ever wore feathers.

CHAPTER XIII

THE AVIAN BEAUTY CHORUS

FINE feathers make fine birds—but not necessarily tuneful ones. Without indulging in too many odious comparisons, it is undoubtedly to be recorded as a fact that not amongst birds alone but also amongst the members of a certain race of animals considerably higher in the scale of life, beauty of voice and beauty of appearance are seldom found combined in the same individual.

In the avian world brilliance of colouring goes almost invariably with a harsh, or otherwise displeasing, voice. The songsters, from that feathered Melba, the nightingale, to the tuneful piping crow, are always soberly, and often even dowdily clad. One must not expect too much, however, and even if the members of the Zoo's beauty-chorus offend the ear, we may find consolation in the splash of exotic colour which they bring to London, especially during the sombre winter months. The most beautiful birds are inmates of the Small Bird House. Here are the Birds of Paradise. For more than a century

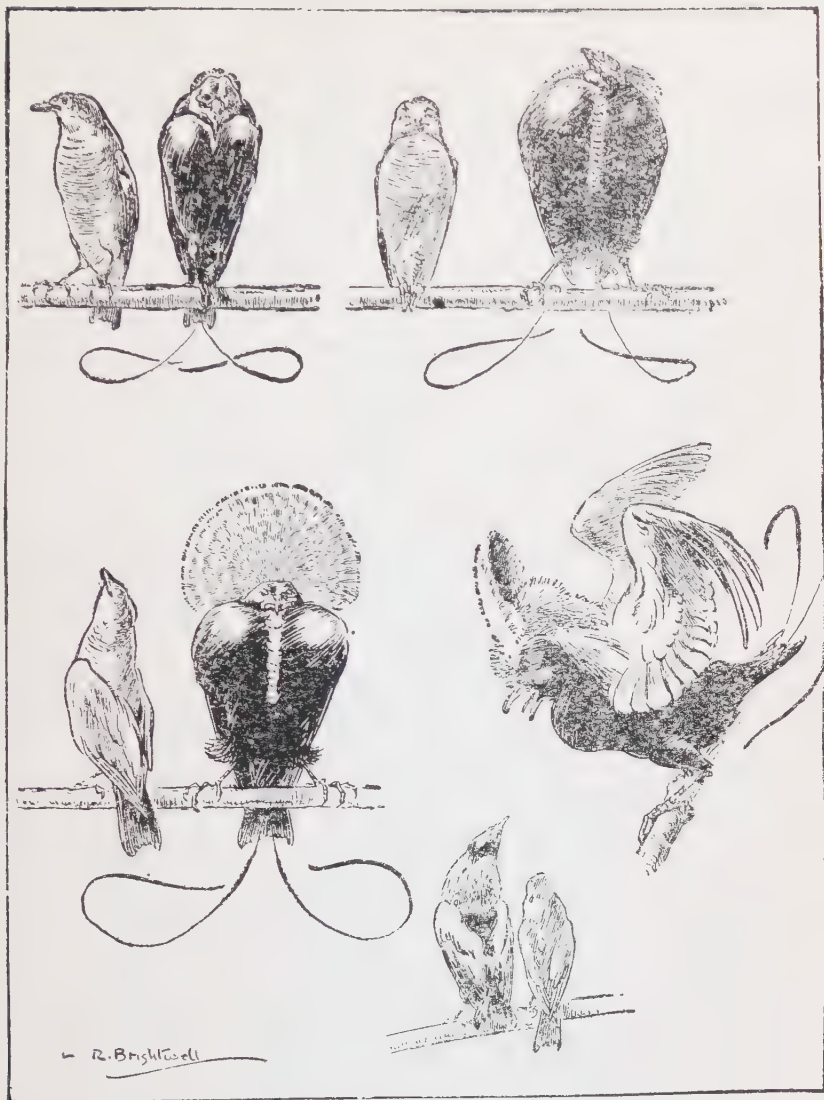
and a half the skins of these gorgeous creatures have been imported from New Guinea and the neighbouring islands, but only in comparatively recent times have the birds become really known. The early dealers removed the legs, and often the wings, before packing the skins, and the arrival of the mutilated remains gave home naturalists much food for speculation. But the old-time naturalist was not easily beaten. If he could not hit upon the right explanations of any given phenomena, he very quickly invented some. It was formerly universally believed that birds of paradise were hatched minus legs and wings, and the males were supposed to float through the air with the long flank and tail feathers streaming behind, forming a sort of raft in which the hen nested and brought up her young. Even the great Linnæus in 1766 named a certain species "apoda"—or "bird with no legs."

Structurally the birds of paradise are nothing more than highly ornamented crows, their nests, eggs, and voices in all cases strongly recalling those emanating from our home-made rookeries. The plumage of the males is, however, very sumptuous, and in glaring contrast to their distinctly dowdy brides. Of those exhibited at the Zoo, the green, yellow, orange, and salmon pink, greater bird of paradise, the emerald green, black and yellow, twelve-wired bird of paradise,

and the scarlet, white and azure-blue king bird of paradise, are the most brilliant examples.

In several forms the wings and tail feathers achieve such proportions as to render flight all but impossible. In a Papuan bird of paradise for instance the tail shafts are three feet in length, although the body of the bird is not much larger than that of a raven. Most birds of paradise indulge in elaborate displays, when they cut the strangest capers, the males of the Blue Bird of Paradise posing before its "intended" for hours at a time—upside down. When the first specimen brought to the New York Zoo thus courted its cage-mate, the keeper dashed off to the curator's office with the news that the bird was in convulsions! During courtship most forms appear to swell to twice their natural size. Presently a line of livid colour appears down the centre of the breast, the feathers stand erect, and finally a huge halo-like crest rises from the bird's head. Failing the presence of a hen, Zoo specimens can occasionally be induced to display by showing them some bright trinket. A looking-glass seldom fails to excite them, the bird's own image doubtless being mistaken for a hated rival.

The Sun Birds of the Old World, and the Sugar Birds of South America and New Guinea, are almost as dazzling as the birds of paradise, although smaller. They have very slender bills, and long extensible tongues. The tiny feathered



DISPLAY OF MAGNIFICENT BIRD OF PARADISE

gems known as sugar birds have the latter organ forked and split up into a number of horny whisks, the better to "mop up" the honey from the flowers. They require an enormous amount of nourishment, and as they will only feed in comparatively bright light, the Zoo bird-house is artificially illuminated on dull days and for some hours after closing time in the winter months, in order to prolong their meal-time hours.

No birds enjoy greater fame for brilliance of colour than the Humming Birds of tropical America. In size and in the nature of their flight they suggest insects rather than birds. The giant of the race is but nine inches in length, but the majority are not much larger than bumble bees. The bill of a humming bird is long and curved, and the long flexible tongue is forked, the two ends being fringed with hairs. The latter organ is shot forth at lightning speed when extracting a sip of honey, or whisking a small insect into the great beyond. The wing muscles are enormous for the size of the bird, and enable it to poise in mid-air before some pendent bloom, after the manner of a hawk moth.

Almost every conceivable change has been rung upon the form of feathering of these birds. The several hundred species known are nearly all characterized by vivid metallic tints, but whereas one may appear to be all tail, another will support downy cushions on the hips, and

perhaps an extravagant head-crest. The nests are as dainty as their builders. Often they are affixed to the stems of plants or hang from the tips of leaves. Moss, down, and spider webs are amongst the materials used, and the tiny pea-shaped chalky-white eggs eventually hatch out into nestlings that are naked and blind.

Some years ago twenty humming birds were exhibited in the Zoo. They were housed in two large glass cases stocked with nectar-producing flowers which were maintained at a temperature of 75 degrees F. They survived unfortunately only a few months.

The Touracous of tropical Africa are comparatively large birds which exhibit beautiful metallic tints which, however, wash off. Some of the flight feathers are usually of a vivid crimson, and contain a curious pigment called "turacin" which includes amongst other ingredients copper. This can be reduced to a powder, and is employed for all kinds of delicate work requiring a highly soluble pigment.

The Toucans of Central and South America may be given a place in the second rank of the beauty chorus. Their colours lack prismatic sheen, but are "splashed on" with a bold and poster-like effect. The enormous bill of the toucan which is a light and porous structure, and is used for crushing pulpy fruit and purloining the eggs of other birds, is no less brilliant

than its feathering. The creature never walks, but hops, producing a ludicrous effect, which is in no way reduced by its gigantic nose. When going to roost the toucan tucks its ridiculous bill beneath one wing, and covers it entirely by turning its tail over its back. The most plausible explanation of the act suggests that if the toucan's resplendent nasal organ were left exposed its shining surface might call the bird's presence to the attention of such undesirable passers-by as snakes and carnivores.

The Kingfisher, most brilliant of our native birds, is inseparable from hot summer days, luxuriant foliage and still waters. Any quiet waterway, fairly well stocked with small fish, and adequately protected from the imbecile with a sporting gun, may afford sanctuary to this beautiful bird. The kingfisher demands only peace, and a sandy soil in which to build. Failing the latter it sometimes uses a hole in a tree or even in a rubble wall. Usually it makes a home for itself by shovelling out the sand just above high water mark, until it has constructed a tunnel from three to six feet in length, terminating in a small bed-sitting room. Here in March or April about half a dozen glossy, snow-white and almost globular eggs are laid. They are hatched out upon a mattress composed of fish bones, which the parents regurgitate in the form of small pellets. When possible the nest is built near some

convenient branch. As soon as the young are strong enough they are marshalled in a single rank upon the family perch, where they sit in a solemn queue awaiting the advent of their fish rations. Only when there is a fish shortage are dragon flies and other aquatic insects acceptable. The kingfisher always keeps close to the water's edge, often waiting patiently for hours on end, perched upon an overhanging branch, and with its beady eyes fixed upon the depths below, bides its time until the psychological moment is at hand. The bird does not thrive in captivity. At the Zoo it is, however, occasionally to be seen—not in a cage, but disporting itself at liberty on the banks of the Regent's Canal. It has been known to nest in the London parks, and is a regular feature of the "bird island" on the Serpentine.

The large Australian Kingfisher or Laughing Jackass, needs no introduction for those who served overseas during the war; for its native name of "Kookaburoo" stood for one of the concert parties that took one's mind off the ever present topic of shell-fire. The jackass is a bird maligned. His gay plumage, volatile nature, and exuberant voice have led many to write him down as a feather-brained fool. He is in reality a quite serious-minded bird, and a good friend to man, since he relies for food upon rats, mice, snakes, and other creatures that scarcely contribute

THE AVIAN BEAUTY CHORUS 151

to the settlers' peace of mind. Although a kingfisher in form, the jackass is no fisherman, and lives in the bush, often far from water.

The jackasses in Regent's Park keep up their habit of singing their morning and evening songs—a low gurgling laugh which gradually swells to a deafening cacophony that on a still day, can be heard a mile off. So regular are his times for laughing that the old colonists relied on his outbursts to tell them of approaching sunrise and sunset, and dubbed him the “settlers' clock.”

CHAPTER XIV

TALKING BIRDS

NONE of the feathered folk at the Zoo have contributed so much towards the entertainment of the public as the talking birds. The majority being brightly coloured enliven their surroundings, and all can be relied upon to keep alive one's sense of humour. The cryptic phrases uttered by these birds are usually grotesquely irrelevant. On occasions, however, they may be uncannily apposite. The best known, if not the most accomplished of the talking birds are, of course, the parrots. There are in all about five hundred species of parrots—and about five million different parrot stories, only a few of which are true. The trouble with the parrot story-teller is that he usually puts an all too human construction on the bird's speech, and would have it believed that the creature knows what it is saying. But it is really only the imitative faculty of the bird, and not its brain, that is highly developed. The receptive mind of any talking bird quickly seizes upon any words or even sentences which

take its fancy, provided they are brought to its notice with sufficient frequency ; and the peculiar formation of its tongue, palate and larynx enables it to reproduce them for its own private amusement. If its performance brings a reward from its audience so much the better. It soon learns to associate a nut or a piece of sugar with its vocal efforts, and proceeds to give encores *ad lib.*—sometimes to a wearisome extent. Many curious instances of this “ encore habit ” might be cited of the Zoo parrots. A classic example is that of the African Grey Parrot that was once quartered near the bank of the Regent’s Canal. Year in, year out, he listened to the bargees shouting “ whoa ” to their plodding horses, and in time the parrot learnt to reproduce the command with a beery hoarseness that was all too human. Over and over again would the obedient old nags come to a sudden halt in answer to the bird’s cry, exasperating the bargee, and delighting the canal bystander. As a rule there is little sense in a parrot’s chatter. Jacob, however, a magnificent thirty-five-year-old macaw that used to guard the entrance to the Melbourne Zoo, gave accurate directions to the public and when he saw visitors attempting to go out through the entrance turnstiles instead of the exit ones, kept calling “ Other way out ” until his instructions were obeyed. The parrots, parrakeets, cockatoos and lorries hail from all the warmer parts of the world,

and are without exception forest dwellers. Their nests are of the "general service" pattern—rough basin-like formations constructed of moss and twigs, sometimes built in the crutch of a branch or tucked away into a hollow tree-trunk. It is common knowledge that a parrot's "toes" are arranged in pairs, thus equipping their wearer with the ideal climbing apparatus. The owl, the cuckoo, the toucan, and a number of other birds enjoy a similar "footwear" but to a less highly specialized extent. A parrot once at large in this country can make good, provided there is enough food to hand. Quite a number of parrots and cockatoos have from time to time escaped from their aviaries at the Zoo, and in most cases the fugitives have picked up a living in Regent's Park and withstood the rigours of our winter for many months before giving themselves up. Sometimes the delinquent has been brought back to the Zoo by park keepers, but more usually the runaway has succumbed to home-sickness—or rather Zoo-sickness—and responded to the call of his fellows in the big outdoor aviary. Parrots are undoubtedly amongst the hardiest of tropical birds and are easily acclimatized. From time to time they are bred in the Zoological Society's menagerie. The eggs are usually looked after by both parents, the father bird sitting on them during the daytime and the mother taking night duty. On



COCKATOOS

hatching the young parrots are the most grotesque-looking little creatures, being quite naked and provided with enormous beaks.

A pathetic appeal for a husband was received a few years ago by the curator of birds at the Zoo on behalf of a hundred-year-old parrot. The bird, according to its owner, laid a number of eggs every year only to have them removed, and spent her whole time with imaginary little ones in the corner of her cage, where she deposited bits of all the food given her. The remarkable old bird spent a somewhat belated honeymoon in Regent's Park, but, as was anticipated, with no satisfactory results.

The parrot's restless tongue has won its owner a world-wide reputation. This organ is, however, more than a mere instrument for counterfeiting human speech, for it also plays the part of a hand. Give a parrot a nut, and then watch how cleverly his large club-shaped tongue turns the offering round and round, and working in conjunction with his mandibles, shells it, cuts it into pieces, and finally tosses it down his throat.

The parrot is renowned as a linguist, but he is not without his rivals. Many other birds by a happy combination of brain and plastic vocal organs can emulate the parrot's achievements and some even surpass them. Amongst the members of the crow family there are many "talkers."

They are all of high intelligence and have impressed man from quite early times when they were held to be intimate with all kinds of good and evil spirits. They have played an important part in folk lore and heraldry in almost every country in the world. The raven looks his part—that of a knowing and self-seeking rascal. The bird has a genius for selecting snug retreats wherein to raise its brood, and a lonely mountain crag is as likely to appeal to its secretive nature as the ruin of an ancient belfry. Ravens were once not uncommon in London, but to-day their last stronghold in the capital is the Tower, where several live and enjoy the privileges of regimental mascots. Every morning they are fed by the officers in residence, and as they take the proffered scraps of meat solemnly stalk up and down the Tower Green hoarsely uttering such military phrases as “Wait for it,” “Form fours,” and “Shun !”

Another talking crow is the jackdaw. Like the raven he is all in favour of a quiet life, and selects a dizzy cliff ledge with a three hundred foot drop, or a musty church steeple for his residence. In such a situation he brings up his family—one a year, hatching his graceless offspring from four or as many as six greenish blue eggs, dappled with brown. Occasionally he makes a regular nest in some ancient tree and not only upholsters it but protects it with a

domed roof made from such materials as moss, leaves, horsehair, etc.

The magpie, another mischievous member of the crow family, is also gifted with the power of reproducing human speech. The term "magpie" has become a synonym for a busy-body or scandal-monger. The reflection thus cast on the bird's character is amply justified, for the magpie will visit nests other than his own and will probe into the family affairs of all kinds of feathered folk. It will steal anything from a hedge-sparrow's egg to a gold watch, exhibiting a most deplorable leaning towards petty larceny which is shared by many other members of the crow family—from the raven to the æsthetic bower bird. Whenever possible it makes a roofed nest—covering its eggs with a "lid" of sticks and branches in order to secure the privacy it loves.

The starling, a close relative of the loquacious raven and the magpie, can be taught to reproduce many phrases of speech but it chiefly excels as a musical mimic. Specimens have been on show at the Zoo exhibiting very varied repertoires. A tame starling now ornamenting a well-known tavern can accurately reproduce the opening bars of the Volga boat song.

The efforts of the starlings are excelled by the American mocking birds. The starling is capable of imitating the songs and love calls of its hedgerow neighbours but the mocking

bird carries the imitative faculty still further. One caged at the Zoo would in the early hours of a summer morning run through a series of selections from the songs of (1) the blackbird, (2) the starling, (3) the thrush, (4) the peacock, (5) the Australian bell-bird, (6) the plover—and as a “grand finale” would burst into a melody peculiarly its own, and equal to the best efforts of the nightingale.

Last but not least amongst the Zoo talkers comes the Indian Mynah. This bird's general colouring is a glossy black, relieved by a ring of brilliantly coloured yellow flesh round the eye, sometimes extending to the base of the bill. The mynah's impersonations are extraordinarily accurate. Whereas a parrot will run through its stock of catchwords in a monotonous tone of voice, the mynah is very quick to pick up the exact intonation of its owner, his way of speech changing with his ownership. Thus a mynah that lived for some years in the North and was transferred to the London gardens, changed its accent from “Coop-tie” to Cockney within a few weeks. The mynah is very quarrelsome and an inveterate fighter. Its pugilistic propensities are exploited in certain parts of the East, as two cock birds will put up a battle scarcely surpassed by the Indian quail or the old English fighting cock.

CHAPTER XV

SNAKES

SNAKES, in spite of the fact that the majority are quite harmless, are all regarded by the ordinary mortal with an instinctive horror. It is true that they are responsible for an annual human death-rate of approximately 150,000, but this fact alone fails to elucidate the reason for the interesting psychological entertainment which is so often enacted outside the reptile house, where many of the visitors assume an aspect of terror, and give utterance to various exclamations of disgust before being induced to enter the Zoo "chamber of horrors." The reverend gentleman who some years ago wrote to me asking for the loan of a harmless snake in order that he might show his congregation the animal responsible for original sin had obviously himself not inherited an aversion to snakes (provided they were harmless). He had, however, no misgivings as to the effect the snake would have on his flock, and was prepared to make their flesh creep for the good of their souls.

The prevalent dislike of snakes may perhaps be attributed to the creatures' fixed stare, which though credited by the ignorant to hypnotic influence, is really due to the absence of eyelids. That snakes hypnotize their prey before devouring them is a fallacy, for it has been proved at the Zoo and elsewhere, that with the occasional exception of the higher monkeys, all animals are quite indifferent to their presence.

Comparatively effective results in the fight against mortality by snake-bite have been obtained since the discovery of anti-venine, but unfortunately the poisons of snakes differ from one another, and therefore the use of a serum is ineffective in a district where several kinds of venomous snakes occur. Unnecessarily drastic measures are occasionally adopted by those bitten. An acquaintance of mine, being bitten on the finger by a snake in India, promptly shot off his finger, and then proceeded to shoot the snake. The snake, a harmless one, now reposes, together with the severed finger, in a pickle-jar. A measure recommended in the State of Sao Paulo for the destruction of poisonous snakes is the protection of a large harmless snake called the *mussurana*, which feeds exclusively on other snakes, showing a partiality for the noxious species such as the *fer-de-lance* and the rattlesnakes, overpowering and swallowing individuals as large as itself.

In India some years ago a premium was placed on the heads of poisonous snakes. These payments had to be discontinued, for as soon as the measure was adopted the natives took to breeding cobras in captivity, snake farms springing up all over the country. This system was also given a trial in St. Lucia where a reward of 4d. for every fer-de-lance was offered. The inhabitants likewise bred the reptiles in confinement, and when it is considered that the fer-de-lance brings forth up to sixty young at birth, it is not surprising that these payments had to be abolished. Snake-charmers often extract the fangs of their snakes prior to their performances. There is no doubt, however, that the immunity of the best snake-men is to be attributed to the fact that they have submitted themselves to graduated inoculations of the venom. In many parts of the world the natives profess a belief in the efficacy of snake-stones as a remedy to be applied on the part bitten by a poisonous snake.

These stones, which are calcareous concretions extracted from the bladders of various animals, have no real curative value. How highly they are prized, however, was illustrated not very long ago in India, where an action was tried in which the plaintiff claimed the return, or damages for the loss of one of these stones, and succeeded in recovering ten pounds.

Some snakes have the power of "spitting" their poison, ejecting the venom to a considerable distance, and always aiming at the face of their enemy. The snake with this objectionable habit most developed is the South African Ringhals Cobra, and new arrivals at the Zoo's reptile house always besmear the glass panes of their cages with the poisonous fluid, in their attempts to blind their visitors. When the doors of the enclosures containing these dangerous reptiles have to be opened for the purpose of introducing food, or cleaning, motor goggles are worn by the keepers for the protection of their eyes.

Snakes may be roughly divided into five groups: (1) Burrowing snakes, of small cylindrical form, which spend most of their lives underground; (2) Ground snakes, which live above ground, and only occasionally enter water; (3) Tree snakes, expert climbers living an arboreal existence; (4) Fresh-water snakes, which are essentially aquatic, and (5) the Sea snakes which never come to land and are provided with compressed rudder-shaped tails.

Apart from the poisonous forms which seem to have a special attraction for the public, the snakes making the best exhibits in captivity are Anacondas and Pythons, which attain gigantic proportions. The Reticulated Python and the Anaconda share the distinction of being the largest of all snakes, each attaining a maximum length

of thirty feet. The largest snake at present at the Zoo is a reticulated python measuring twenty-seven feet, an unwieldy and malicious pet presented to the Prince of Wales by the Federated Malay States on the occasion of his visit to the Far East in 1922, and deposited by His Royal Highness in the Regent's Park menagerie.

The moving of such giant snakes is no easy task, and the services of at least fifteen non-panicky men is required when dealing with a specimen of over twenty feet long. In handling these creatures the keepers are disposed at intervals of a foot or two like firemen on a hose. Owing to the crushing powers of the constricting snakes being greatest at the hindermost part of the reptile, a larger number of men are assigned positions on the tail than on the body.

Among the tree snakes are some which are known as "flying snakes" from their habit of parachuting down to the ground from the top of trees, the underpart of the body during this performance being drawn inwards, the creatures becoming concave along their under surface like a piece of bamboo dissected longitudinally. Apart from the cobras, several harmless snakes are able to raise the anterior part of their bodies vertically, and expand their necks, in imitation of their dreaded relatives. A quite innocuous North American species known as the Blow Adder or Hog-nosed snake from its broad upturned snout,

has this power highly developed. Another peculiarity of this particular snake lies in the fact that when it finds its aggressive attitude unsuccessful in intimidating its enemy it will turn over on its back and feign death. It is agreed by all who have seen the snake simulating death, that its extraordinary behaviour is not due solely to fright, but constitutes a deliberate trick.

Mr. R. L. Ditmars, of the New York Zoological Park in his *Reptiles of the World* tells an amusing tale of an adventure he had with one of these creatures when on a collecting tour in the Southern States :

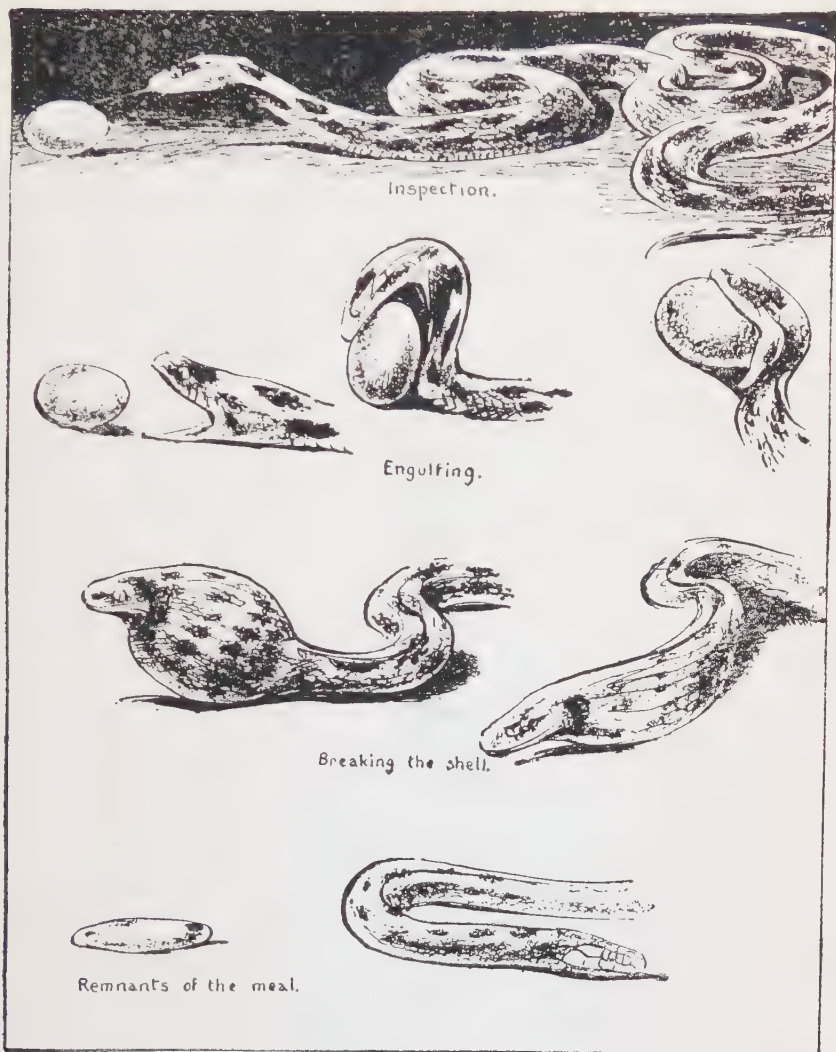
“The negroes regarded the species as exceptionally poisonous. They had never lingered by a specimen long enough to discover its habit of ‘playing ’possum.’ On the way to the savannas, across a cotton-field, a big blow-adder was found crawling along a sun-bathed furrow. The writer’s coloured guides and assistants shouted in terror, urging that this kind of snake be excluded from the collecting bags and instantly killed. They were asked to pause, to form a large circle, and witness the writer’s powers in snake hypnotism. The writer explained he could slay the snake by a few waves of the hand, without touching it. Walking up to the snake, a few motions of the hands convinced the creature its hostile airs were of no use, so it

soon rolled on its back, becoming apparently lifeless. A murmur of surprise came from the staring circle. The writer insisted the 'dead' snake be passed from one to another to convince his assistants of his powers. With many uneasy motions, nervous laughter and shouting, the snake was handed around by his tail. Then the circle was told to remain perfectly quiet for a minute more, to witness a restoration to life. This provoked a heated argument that the serpent be permitted to remain 'dead,' but the 'hypnotist' was adamantine: he wanted a living specimen for his collection. Placing the snake upon the ground, he made a few eccentric motions, then, removing his hands, kept perfectly quiet. Thinking danger past, the reptile rolled over, and started away. It was caught and put in a bag. The writer's idea had been to promote respect for himself in a wild, and almost lawless region. But the effect was too pronounced. His assistants at once decided that his powers of black art were suspiciously dangerous. They dropped away, one by one, until the ludicrous situation was presented by necessarily changing the location of collecting in order to leave a bad reputation behind."

Snakes periodically change their skins, the outer layer of the epidermis being cast entire and turned inside out in the process.

Some snakes lay eggs which are produced singly or in clumps, whilst others bring forth active young. As a rule the eggs are deposited in the earth, sand, or among dead leaves, and are hatched by the heat of the sun. In the case of the pythons, however, they are protected by the mother, who by coiling herself round them subjects them to a form of incubation. It was ascertained by the observation of a large specimen that laid eggs at the Zoo and guarded them until they were hatched—a period of nearly three months—that the temperature of the parent's body during this period rose many degrees above the normal.

The food of snakes varies considerably, as does their method of killing their prey. Burrowing snakes feed on worms and small rodents, most ground snakes on various mammals and birds, arboreal snakes on birds and lizards, and aquatic snakes on fish or frogs. A few snakes are cannibals, whilst the small egg-eating snake of South Africa feeds exclusively on eggs. The latter snake is practically toothless, but owing to the presence of tooth-like projections on the vertebral region, and their egg-breaking functions, it may perhaps be said to have its teeth situated on its backbone. The eggs are swallowed whole and reach the gullet unbroken, where they come into contact with the tooth-like projections of the vertebræ, the object of which is to break



EGG-EATING SNAKE

the shells, which are later ejected in the form of pellets. The expanding power of the snake's jaws are amazing, and several specimens which lived in the Zoo and had heads no larger than a man's little finger, swallowed bantam's eggs without turning a scale. Mr. F. W. FitzSimons, director of the Port Elizabeth Museum, has made some interesting experiments to test the intelligence of these snakes. He states in his *Snakes of South Africa*: "You cannot trick him about things which his ancestors for untold generations have learned by experience, and transmitted to him in the form of a remarkably acute sense of smell, which is very necessary for him in his profession of an egg-eater. Being short of fresh pigeons' eggs once, I went to my cabinet and took the clean-blown shells of some doves' eggs. Beating up the contents of a fresh fowl's egg, I syringed it into the empty shells, and carefully pasted tiny bits of tissue paper over the holes. Placing these in the egg-eater's cage, I watched, expecting the snakes to swallow them as they did the other eggs. First one egg-eater advanced, touching each egg gently in turn with the tip of his nose or the point of his forked tongue: he crawled away in disgust. Another and yet another eagerly advanced, repeating the performance and duly retired. Leaving the eggs, I returned in a few hours' time to find them still there. For two whole weeks these eggs remained

in the cage untouched, although I refrained from giving the snakes any others. Then procuring some fresh pigeons' eggs, I put them into the cage. The snakes approached, touched them with their noses or tongue, and instantly began to swallow them. I tried this experiment a second time with the same result. Frequently I noticed that the snakes will eat some of the eggs given them, and reject others. On breaking the latter open I always found them either addled, or with a more or less developed bird inside."

In the boas and pythons and a few other non-poisonous kinds the victim having been seized is surrounded by the coils of the serpent and crushed to death. Some snakes start feeding straight away without making any attempt at first killing their prey, whilst the majority of poisonous species strike at the food before seizing it, and wait for the venom to take effect. As previously mentioned the power of fascination attributed to snakes is non-existent. Many years ago, in the late autumn, I remember introducing a mouse into the compartment of a South African house-snake, which I kept in a cage at home. As soon as the mouse entered the cage it went up to the snake, and insisted on nesting in the centre of its coils, pushing at the reptile until they lay in the required position. The snake and the mouse lived in harmony for some weeks, but as the winter approached, the former decided

to dig a burrow in which to hibernate, and this it proceeded to do, the mouse being an interested onlooker. The snake, however, on entering the burrow on its completion was not allowed to enjoy its well-earned rest, being turned out by the mouse, who promptly took possession, the unfortunate serpent being forced to construct other winter quarters. On the completion of the second burrow the mouse once more ejected the rightful tenant, and settled down in it, the snake returning to the one he had been forced to evacuate. With the advent of spring the long-suffering reptile's mind turned to thoughts of food—and possibly revenge, with the result that it made a meal off its companion with which it had cohabited for nearly six months.

That snakes have little sense of taste was demonstrated some years ago at the Zoo, where a python swallowed a blanket which had been placed in its cage. Another python kept by an acquaintance of mine swallowed a large bamboo pole. On this occasion the pole was being used to push forward a dead rat towards the hungry reptile's head. The snake, seeing something move, seized hold of the rod which it proceeded to swallow, not finding out its mistake until it had got over two feet down its throat, when it disgorged the unsatisfying meal. The process of swallowing is a more or less mechanical one, for snakes, being provided with recurved teeth,

once they have seized hold of their prey find it extremely difficult to let go, and have to go on swallowing. It occurs therefore that when a number of serpents are kept together in the same cage two will sometimes seize hold of their prey at opposite ends with the result that when their snouts meet in the middle of the body of one of the animals served up for their dinner, the snake with the largest gape proceeds to swallow its companion. Such incidents occur from time to time at the Zoo. Not long ago two large North American king snakes measuring nearly six feet in length seized hold of a rat at opposite ends. A tragedy was only just averted, for when the keeper's attention was first drawn to the occurrence only three or four inches of the smaller snake's tail was protruding from the mouth of the larger specimen, who was eventually forced to disgorge his unfortunate cage-mate. It would be imagined that the serpent that had been almost completely swallowed would have died or at least suffered from shock. Not so, however, for the victim was so little put out by the experience it had gone through, that it actually continued its meal and put away several rats and mice within a few minutes of having been disgorged. A similar incident recently occurred in one of the python's cages, when two large African specimens seized hold of a rabbit at opposite ends. The termination of the incident

was not so happy a one as in the case of that of the king snakes, for the larger python refused to let go its hold of its slightly smaller companion, which it proceeded to devour.

King snakes, which are black in colour, marked with yellow or white bands, feed not only on small mammals and birds, but also on other snakes. It is in fact a decidedly useful creature as it wages war against rattlesnakes, moccasins, and other deadly North American snakes, to the poison of which it is said to be entirely immune.

The enormous size of the prey which some snakes are able to swallow is quite remarkable. Anacondas and pythons have been observed to swallow fair-sized antelopes with their horns, such feats being rendered possible by the great elasticity of the ligaments by which the jaws are attached and the mobility of the ribs.

In captivity snakes are somewhat capricious in the choice of their food. A reticulated python, for instance, which lived many years ago in the Jardin des Plantes, Paris, had been starving for some months, although offered the ordinary bill of fare that is usually provided for pythons—ducks, fowls, rabbits, etc. Then a goose which formed part of the collection broke one of its legs, and as it had to be destroyed it was put into the cage of the fasting snake. The python immediately seized hold of it, and made its first

meal since its arrival in Paris. The curator thought that naturally henceforth it would go on feeding. But not so. Fowls and ducks were once more refused. Some months later, as an experiment, another goose was introduced into its cage, and was again immediately taken. It was eventually found that this snake would only eat geese, refusing all other food.

Snakes are capable of going without food for very long periods. Thus an Indian python received at the Zoo in July, 1920, and at the present time in the best of health, took its first meal in Regent's Park in February, 1922. The record is, however, held by a boa kept in Paris, which fasted for four years and a month.

The distinction of being at the same time the deadliest and most aggressive of all the snakes is shared by the King Cobra or Hamadryad of India, which may attain a length of fourteen feet, and the somewhat smaller and more slender Mamba of tropical and South Africa. The bite of the king cobra produces death in man in anything from one to six hours. An eye-witness of an elephant bitten on the trunk by this snake has recorded the fact that the victim died in less than three hours. The king cobra feeds exclusively on snakes, and a large specimen which has been an inmate of the Zoo reptile house for some years devours three or four common grass snakes at a single meal. The first specimen arrived at the

Zoo in 1875. It was inadvertently placed in a cage with a number of common cobras, and being very hungry after its long journey it devoured a number of them before its identity was discovered. This meal cost the Zoological Society £25, some of the snakes eaten being the property of a dealer who had deposited them in the gardens.

The Mamba varies in colour from grass green to black. Green specimens are arboreal, living in creeper-covered bush or the boughs of trees, whilst brown or black specimens seldom venture from the ground, frequenting the neighbourhood of old farm buildings and other localities where rats and mice are abundant. Unlike the majority of snakes the mamba when surprised does not rush off in an opposite direction, but instantly pursues the intruder venturing in the neighbourhood of its haunt. Whilst travelling at full speed it can strike right and left, and it is therefore not surprising that it is the most dreaded of all snakes in Africa. The green variety often chooses to lie entwined in the branches of trees overhanging the paths, with the result that natives are often bitten on the hand or shoulder whilst passing under the branch of a tree in which one of these snakes is hidden. A well-known South African naturalist has stated that as a general rule the more we learn about snakes and their ways the less fear we have of them, but the more one learns of the mamba and its ways the greater

grows the fear of that deadly and aggressive creature.

No cage in the Zoo's reptile house attracts more attention than that containing the Rattlesnakes of which nearly a score of species are known, and all are distinguished by their rattle. Many other serpents have equally large poison fangs, but the "rattler's" caudal appendage marks him as a snake apart and has earned for him a world-wide reputation. All kinds of extravagant theories attach to the rattle, which consists of a number of caps of horny skin filled with air loosely interlocked to form a string of beads which may range in length from one to fifteen. The Indians maintain that a segment is added to the rattle each time the snake kills a man—doubtless another version of the "scalp fetish." More enlightened but still misinformed persons have broadcasted a theory that the length of the rattle is an index to the snake's age. A string of more than ten segments certainly suggests that the owner is fairly mature, but considering that portions of the rattle are continually being knocked off or otherwise detached it will be seen that their evidence is at best unreliable. The rattle in the newly-born snake is represented merely by a small horny button, the subsequent segments being added each time the snake changes its "skin." The rattle, when in action, produces a sound very suggestive of

running water, and the theory has been propounded that it is intended to decoy animals in search of drink. It is more plausible to suppose that it is intended as a warning. Despite its deadly properties the rattlesnake accounts for very few human lives, as it seldom strikes unless attacked and usually keeps in hiding. As recounted in the chapter "After Dark" it is said to have a penchant for sharing peaceably its underground retreats with the burrowing owl and prairie marmots. The snake does undoubtedly consort with the owls and the marmots, especially when the householders have families. In fact the stories of such partnerships must, like certain of the "rattle" theories, be relegated to the archives of un-natural history.

Some of the harmless snakes at the Zoo have now and again escaped, but their liberty has always been short-lived. A small Trinidad snake which was received from Covent Garden Market where it was found coiled round a bunch of bananas disappeared from its cage the day after its arrival at the reptile house. About a month later the attention of the curator was attracted to the enclosure inhabited by the cannibal horned viper, which was devouring another snake. Close inspection revealed the unfortunate victim to be none other than the missing Trinidad specimen. How it came to find its way into the compartment of the horned viper remains a

mystery to this day. On another occasion a seven-foot-long python escaped, owing to a defect in the mechanism of its cage, and was not found until after it had been at liberty for over three months, when it was observed by a visitor coiled round an ornamental pinnacle which surmounts the roof of the reptile house. The visitor was at first under the impression that the snake was an architectural decoration. He changed his mind, however, on seeing the reptile uncoil and descend from its resting-place, and hastened to inform an at first sceptical keeper, whose experience of every kind and condition of Zoo visitor covered a period of over thirty years.

CHAPTER XVI

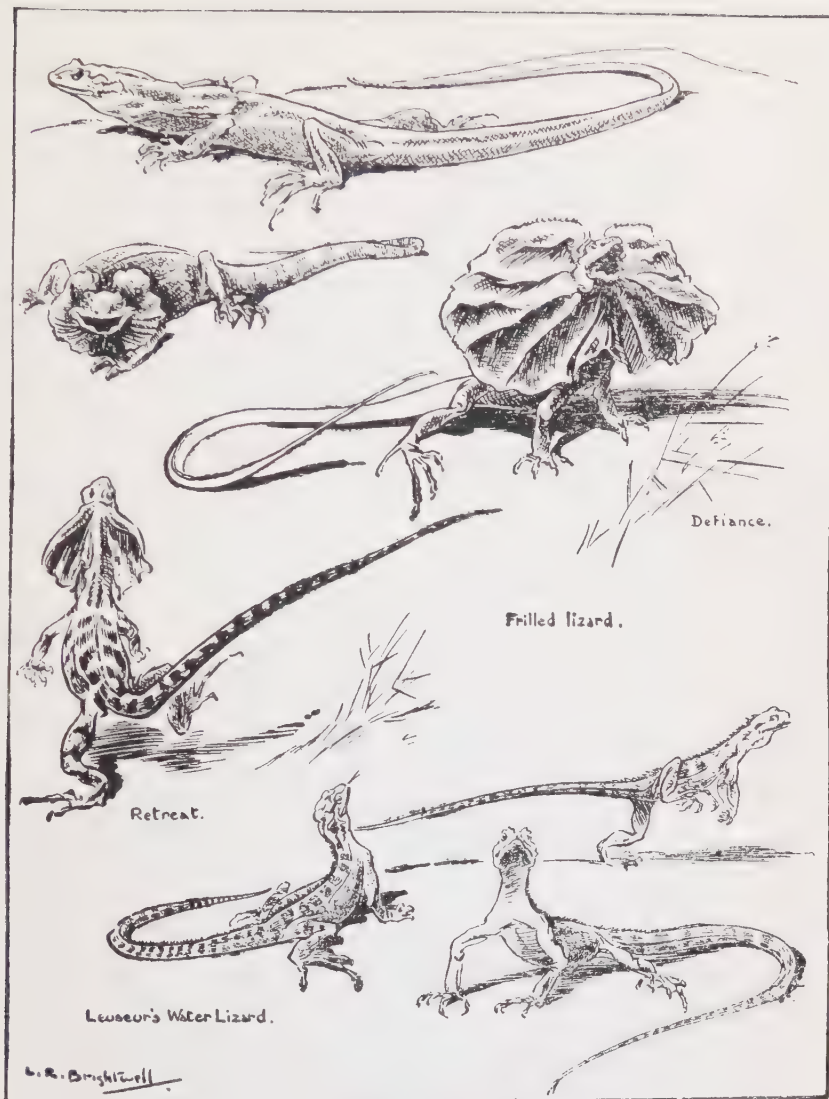
LIZARDS

THE lizards, of which a great variety are exhibited at the Zoo, are typical reptiles inhabiting all countries registering a tolerable amount of sunshine. A few are found wild on Hampstead Heath whilst some exist even so far north as Scotland, but the race attains its maximum development in the tropics—in jungle swamps as well as waterless deserts. Lizards exhibit an amazing diversity of form and differ much in their habits. Some move like “greased lightning,” others would figure among the “also ran” if entered in a tortoise race. Some flame with colour, others are as drab as the rocks amidst which they live. Only one species is harmful to man.

Living lizards must not be regarded as the degenerate descendants of the huge eighty-foot long monsters that once walked the earth. The ancestors of the modern lizards were contemporaries of the giants, but only distantly related to them and in size and shape were much like the

forms living to-day. The majority of lizards prefer to live "on the flat," but a number are arboreal, and a few have taken to burrowing, and serve as an awful warning on the evils of over-specialization. Thousands of centuries of tunnelling have literally rubbed away their limbs, and reduced the reptiles to an almost worm-like form. The *Amphisbaena* of Spain and Portugal and South America is a good example. Apart from being limbless, it is afflicted with blindness, the eyes being rudimentary and covered with skin. It is able to progress both backwards and forwards and moves not as in all other limbless reptiles by lateral movements, but by vertical undulations. As a result of the tail of the creature being short and stumpy and resembling the head in shape, certain superstitious natives of Brazil believe that it possesses a head at either end and assert not only that each feeds in turn but that while the one end sleeps the other watches.

The majority of lizards lay soft-shelled eggs which are deposited in the ground and are hatched by the heat of the sun. A few, however, bring forth their young alive, the stump-tailed skink of Australia, which is covered with enormous rough scales suggestive of the cone of a fir tree, producing a single young at birth, the newly-born lizard being remarkable for its size—half that of the parent.



LIZARD STUDIES

One of the most startling members of the tribe is the Frilled Lizard of Australia. It is about three feet long and differs from all other kinds of lizards in its possession of an immense frill, which surrounds the head and neck—an umbrella-like formation of skin supported by stout rods of cartilage. When at rest the frill falls over the neck and shoulders like a cape. On the wearer becoming annoyed it expands and surrounds the head like an Elizabethan ruff, the expansion synchronizing with the opening of the mouth. The effect is terrific, but although the creature has sharp teeth it never attempts to bite, and its strange performance is just a piece of "bluff," and merely intended to frighten the intruder. In the event of this exhibition of "frightfulness" failing in its purpose, the lizard takes to flight, and in the queerest manner. Folding the frill, it rises on its hind legs, and with the body bent slightly forwards, makes off at a gait reminiscent of that of Mr. Charles Chaplin. The frilled lizard lives chiefly upon insects which it hunts both on the ground and on trees. The few specimens that have lived at the Zoo became so tame that they lost their major attractions as exhibits, since after only a few weeks of captivity they refused to display or perform their entertaining walking act.

Apart from the frilled lizard, Lesueur's Australian Water-Lizard is the only member of the

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tribe which is able to support itself for short distances on its hind limbs.

A more common Australian lizard and one closely related to the frilled lizard is known by the name of Bearded Lizard from the fact that the long erectile bristles on its throat present a likeness to a beard. Many living lizards are heavily armoured. Thus the South African Zonure is remarkable for its enormous spiny scales which cover the entire head and body and project like those of a pine-apple.

The American Horned Lizards, or Horned Toads as they are often erroneously called, fairly bristle with spines from head to foot and recall the armoured dinosaurs of old, save for their diminutive size. They abound on the burning wastes of the southern United States and Mexico, where they hunt for the small insects upon which they live. Speed is not their strong point, but their armature ensures them immunity against most aggressors. A second means of defence is the habit they possess of squirting fine jets of blood from the corners of the eyes to a distance of four or five feet, temporarily interfering with the vision of the pursuing enemy. When found on sand these grotesque-looking creatures are uniform grey or brown in colour, but specimens emanating from forest districts are greenish-grey with markings which exactly match the lichen-covered rocks they frequent. In the neighbour-

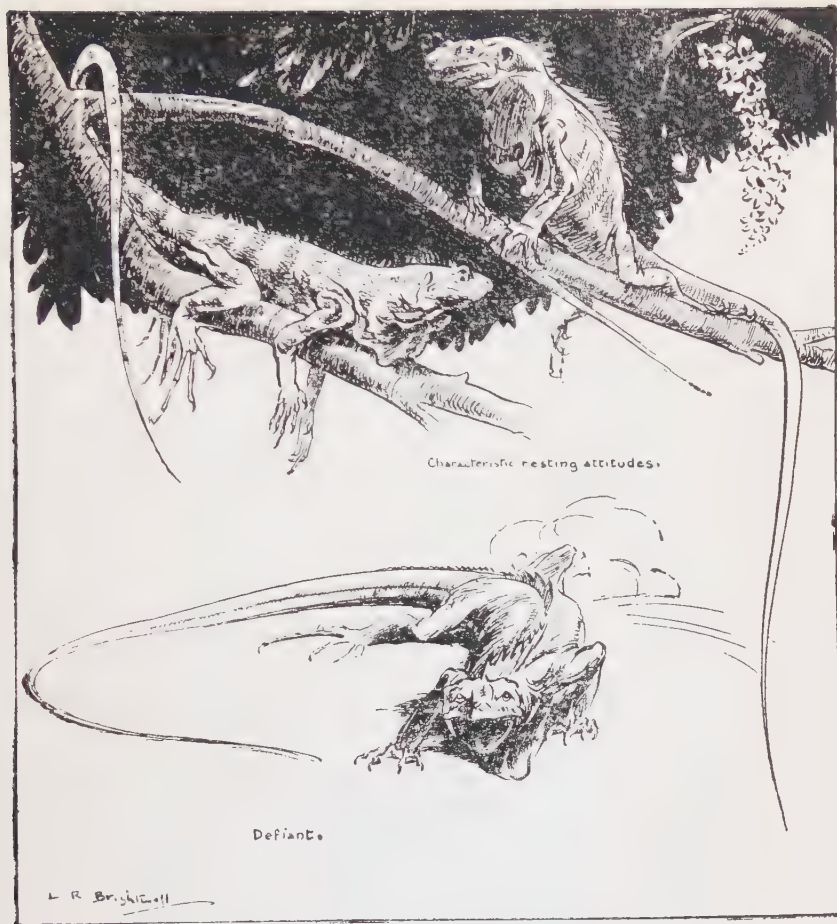
hood of the black lava belt near San Francisco the lizards are black with yellow markings, the gloss of the black lava being faithfully reproduced.

In the flat-bodied Mastigures of the arid wastes of South-west Asia and North Africa only the tail is provided with spines. They are slow moving lizards and easily overtaken, but put up a vigorous defence when handled, augmenting their biting powers by lashing the spike-encrusted tail from side to side like a flail. If kept sufficiently warm the mastigure can be tolerably spry. It needs, however, to be provided with a temperature of at least 90 degrees F. to exhibit much vivacity. Mastigures are omnivorous feeders, but total abstainers from any form of drink. This refusal to participate in liquid refreshment was once a source of much perplexity to the authorities. Quite by chance it was discovered that the lizards took in water through their skins, and now the Zoo mastigures are regularly sprayed.

There is no more handsome inmate of the reptile house than the large long-tailed Iguana of the forests of tropical America. This powerful arboreal creature which attains a length of six feet has a somewhat compressed body, surmounted by a crest composed of large soft leathery spines, extending from the neck to the tail. It is bright green in colour, with broad black bands on the sides, and black rings on the tail.

At the Zoo these lizards prior to the installation in their enclosure of special electric light generating the health-giving violet rays, would seldom feed, and very few ever survived a winter in Regent's Park. Since, however, it has been made possible to supply them with artificial sunshine on gloomy winter days a most striking change has come over them. They have lost all their former apathy, are now full of the *joie de vivre*, and throughout the year take an intelligent interest in their menu which is composed of such delicacies as grapes, bananas, and lettuces. The flesh of the iguana is said to be excellent eating, resembling that of young fowl. The reptile is consequently sold in the local markets and is much hunted for, being often captured by means of dogs, specially trained for the purpose.

The "Glass Snake" is a lizard inhabiting South-eastern Europe in which the limbs are quite rudimentary. It grows to four feet in length, is intensely hard to the touch, and shines like burnished copper. Like certain other lizards it readily parts with its tail if seized by that organ, and whilst its tormentor contemplates the writhing caudal appendage the "glass snake" makes for safe cover, there to grow a new tail at his leisure. Its nearest English relative is the harmless Slow Worm, which is so often mistaken for a venomous snake and is still regarded by the ignorant with superstitious dread.



IGUANAS

The only poisonous lizards known are the two species of Beaded Lizards from Arizona, Mexico, and Central America. The commonest form and one always on exhibit at the Zoo, where specimens have lived for twenty years, is known by its native name of Gila Monster. It is a heavily built creature with a massive head, closely set with beady scales coloured bright salmon-pink with a black "futurist" pattern, like oriental beadwork. The jaws of the gila monster are provided with a large number of grooved fangs which are connected with a pair of large poison glands, and by means of these it can inject so active a venom as to produce death in man. A serious accident took place not long ago at the Pasteur Institute in Paris, where one of these lizards, which was being experimented on, retaliated, and bit the experimentator. The victim only just escaped with his life and was seriously ill for many months. The gila monsters in the Zoo are very tame and have never been known to manifest any desire to attack their keepers. Like another desert dweller, the camel, this lizard carries an emergency ration of fat. Instead of carrying it in a hump it stores its reserve fat in its tail, and in lean times can subsist upon this "stand by" for many weeks.

The Monitors are the largest living lizards. All are vigorous, rapacious reptiles, handsomely marked, and characterized by their long necks

and restless tongues, which are ceaselessly employed to explore the surroundings. They are confined to the tropics of the Old World, the largest Zoo specimen measuring eight feet in length. A monitor recently discovered in Comodo, a small island in the Malay Archipelago, is reported to attain a length of twenty-three feet. These lizards are expert swimmers, and hunt both afloat and ashore all such creatures as they are capable of overpowering. Often the work of slaughter is aided by the claws, which are as large as those of a cat. They are also very fond of eggs, and a specimen which lived for many years in the reptile house would devour as many as eight hens' eggs at a single meal. The larger species of monitors can deal blows with their tails as severe as the castigations inflicted by a hippo-hide whip.

Most of the typical lizards of Europe, such as the Eyed Lizard, the Wall Lizard, the Green Lizard and the Common Viviparous Lizard of this country, can climb with agility. In most places in Central and Southern Europe the wall lizard is one of the commonest features of the landscape, and in certain towns it may be seen disporting itself on the streets and "perching" on the roofs of houses. It is to Marseilles for instance what the sparrow is to London, and the visitor to the local zoo will be amazed to see it sunning itself on the backs of recumbent lions,

darting in and out of the bear dens, and mountaineering on the horns of the buffaloes.

No visitor to the reptile house leaves without inspecting the Chameleons, which differ from ordinary lizards in having prehensile tails, in their feet being formed like those of parrots, the fingers and toes being united in two opposable bundles to form grasping organs, in their possession of projectile tongues, and in their eyes being capable of moving in every direction. The eyeball is enormous and entirely enclosed in skin, save for a mere pin-hole opening in the centre, and the two eyes roll independently in their deep sockets with ludicrous results, one gazing perhaps at the ground, whilst its fellow may be surveying rearward objects, or contemplating the sky. Chameleons belong to an Old World group, inhabiting tropical and semi-tropical countries. Although a few are distinguished by supporting horns on the head, the majority are fairly uniform in general build, and range in size from a few inches to a foot or more in length. They are all arboreal, climbing with much deliberation. They stalk their insect prey with exaggerated stealth, until within a distance about equal to their own length. Then suddenly, by the action of certain special muscles, the sticky club-shaped tongue is shot forth with lightning speed; the insect adheres to its tip and it is withdrawn into the mouth. It is difficult to

understand how the chameleon can have won such a world-wide fame for changing colour. It certainly can assume the most varied hues, often with surprising suddenness and effect, but frequently at variance instead of in harmony with its surroundings. Many other lizards are far more adept at quick changes, whilst many marine fishes and the octopus leave any lizard—let alone the chameleon—far behind in the art of becoming one with a constantly changing background.

A lizard-like creature which has been exhibited in the reptile house for many years but which strictly speaking is not a lizard at all, is the *Tuatera* of New Zealand, a stoutly built creature, which in size and general shape recalls the iguana. It can almost be called a living fossil as it is the sole survivor of a very ancient group of reptiles, and the ancestor of the modern tortoises and crocodiles. A feature of the *tuatera* is its possession of a vestigial structure situated at the top of the head, believed to represent a once functional eye.



CHAMELEON

CHAPTER XVII

FROGS AND TOADS

ALTHOUGH frogs and toads are not generally regarded with the same hostility as the reptiles they cannot be said to be among the most popular inhabitants of the Zoo, and as a rule they merely arouse feelings of disgust amongst those visitors who are ignorant of their cleanly and useful ways of life. Some make entertaining pets, the intellectual powers of a few like the Common Toad being comparatively high, whilst special interest is to be found in a study of the various very ingenious ways and means that they adopt in order to raise their families.

Amongst the innumerable kinds of frogs and toads exhibited in the lobby of the reptile house the acrobatic tree-frogs owing to their bright colours and graceful ways alone are popular, finding favour in the sight of those visitors who are repelled by their less conspicuous and less active relations. Specially attractive is the little bright-green European Tree Frog which has dilated finger tips and is to be observed attached

by these to the glass panes of its cage. The voice of the creature is so extraordinarily loud at times that its introduction in large numbers into the Isle of Wight resulted some years ago in the property in the neighbourhood inhabited by the tree-frogs depreciating in value to quite a considerable extent. The loud chirping sounds are produced by the males only, their vocal sacs forming bladder-like pouches, which when the animals are giving vent to their feelings are blown out to a size equal to that of the frogs' bodies. The European tree-frog has a reputation for being a weather prophet and on the Continent is often kept in glass jars provided with a ladder, which it is expected to ascend when forecasting a fine spell and descend on the approach of rain. At the Zoo the frogs, if they ever had any capacity to foretell the weather, appear to lose it.

Other tree-frog vocalists at the Zoo are the beautiful Golden Tree-frog of Australia whose song resembles the mallet and chisel sounds of a number of masons at work, and the South American frog known as the Smith, from its voice which sounds like the regular beating of metal plates. The female of the latter frog is an accomplished architect and builder, and constructs circular nurseries surrounded by walls of mud, for the reception of its eggs, thus protecting them from fish, water beetles, and other enemies.



TREE-FROG AND TOAD

Some years ago a number of little tree-frogs, natives of the West Indies, and remarkable in that the whole of their development is undergone within the egg, were presented to the Zoological Society by the Royal Gardens at Kew, where they had been introduced unintentionally into one of the hot-houses.

A toad carrying its eggs coiled round its hindlimbs is a sight that in the spring has often attracted the attention of visitors to the reptile house. This toad, a native of Europe, is known by the name of the Midwife Toad from the fact that its eggs, which are deposited on land instead of in the water, as in the case of the majority of frogs and toads, are taken care of by the father who twines them round his legs. He carries them about with him for about a month, when they are ready to hatch he makes for the nearest pond where he relieves himself of his burden.

Of all the frog and toad vocalists that have inhabited the Zoo, the little Fire-bellied Toad of Uruguay is the most accomplished, its call resembling that of the British Greenfinch. Being of a uniform black colour above, the casual observer might be forgiven for mistaking it for a beetle, this superficial resemblance being enhanced when the toad is on the move, for its mode of progression is by means of short runs, and not by hops. Viewed from above it is inconspicuous ; the hinder parts of its under surface, and

legs, however, are of a bright scarlet, so that when the little frog is on its back it appears to be wearing a pair of red bathing-drawers. This brilliant coloration serves as a protection, for when surprised it will immediately turn over, remaining perfectly motionless until the supposed danger has passed. The very few conspicuously-coloured animals that rely solely on their appearance as a means of intimidating their enemies are nearly all poisonous. This fire-bellied toad is no exception to the rule, and this exhibition is intended as a warning, as it secretes a very active poison when seized hold of. The European fire-bellied toad also secretes a fairly active poison, and will likewise when surprised feign death, and by exposing the hinder part of its body and limbs display the brilliant red or yellow markings of its under-parts.

The Brazilian Scarlet Frog, a frequent inhabitant of the Regent's Park reptile house, is yet another frog which exhibits what has been called "warning colours." This bright scarlet creature produces a poisonous secretion which acts on the heart and central nervous system. The venom is so potent that it is actually used by certain natives for poisoning the tips of their arrows with which they kill such comparatively large animals as deer and monkeys. The secretion is also used for the purpose of dyeing the feathers of Amazon parrots. The green feathers are plucked out and

the skin is then rubbed with a living frog. As a consequence the new feathers when they appear are yellow, instead of green, which enhances the value of the bird in the eyes of the natives.

The striking Ornamented Ceratophrys or Barking Toad, a large South American toad marked with green, yellow and black blotches and sporting raised triangular-shaped eyelids is the most vocal member of the Zoo's frog and toad population. It uses its voice, however, not to display pleasure, but anger, the piercing sounds that it produces resembling the barks of a discontented lap-dog. During the display of temper the lungs are greatly inflated, with the result that its multi-coloured body which is then raised from the ground becomes swollen like a balloon. The creature is then extremely grotesque in its appearance, recalling to one's mind some fantastic toy animal, rather than a living creature. The object of the toad's jazz pattern is camouflage, for when it buries itself half in the ground as is its habit, it becomes almost invisible. At the Zoo when placed in a cage in which green vegetation is lacking it has been observed to throw earth over its back with its hind feet. Thus lying half-buried, and perfectly motionless, it waits for the small frogs upon which it lives to pass over it, when the unsuspecting victims are snapped up with lightning rapidity. The North American Bull Frog is likewise good at making

itself heard, and when the occasion arises, produces a fair imitation of a bellowing bull. The smallest frog in the world is one attaining a maximum length of half an inch. It is known by the name of Darwin's Frog from the fact that it was discovered by Darwin on his voyage in the *Beagle*, and is remarkable in having a triangular-shaped snout ending in a long fleshy appendage. One of the most remarkable modes of protecting its offspring is adopted by the male of this creature, for as soon as the eggs are laid they are swallowed by the father who retains them in his throat until the young are ready to emerge as perfectly formed frogs.

The largest frog in the world is Goliath's Frog of West Africa, which may measure a foot in length. Its mouth is so enormous that it experiences no difficulty, if so disposed, in swallowing a young chicken or a full-grown rat. Some years ago an attempt was made to procure a specimen of this giant frog for our gardens. The frog was actually captured and shipped, but unfortunately escaped on the journey. The specimen in question was put into an empty ten gallon spirit drum with water at the bottom. It however evidently objected to the accommodation provided, for on the second day out at sea it succeeded by means of a series of huge leaps in raising the heavy lid of the receptacle—a feat requiring enormous strength—and in committing suicide by jumping overboard.

One of the most remarkable frogs ever exhibited at the Zoo is a Brazilian form called the Paradoxical Frog. Although no larger than our common frog its tadpole grows to a record size, far exceeding the adult both in length and bulk. In consequence of its enormous girth the tadpole was described by the old writers as an animal which began life as a frog but which eventually turned into a fish.

CHAPTER XVIII

THE INSECT HOUSE

THE inmates of the insect house which include not only insects but a variety of other invertebrates outnumber those of any other house in the gardens. Almost every modern device from the submarine to wireless has been anticipated by these backbone-less creatures, some of which are of economic importance as destroyers and protectors of life and property, and a few, such as the silk moths, are of commercial value ; but owing to their complex mechanism controlled by the minimum of reasoning power, it must be admitted that they fail to enlist quite the same sympathies and human interest as do the higher animals. The difficulties attending a public exhibit of invertebrates are endless. Apart from such items as the careful regulation of lighting, temperature, etc., the majority offer difficulties of their own making. A large number are predacious to a degree, and it is in vain for a curator to explain that the conduct of his charges is

entirely in accord with the laws of nature should a visitor complain of, say, a lady spider who has dined off her consort immediately after the marriage ceremony. A certain number of insects and other invertebrates make very charming exhibits. Many of the butterflies are kept during the summer months in a huge outdoor cage like a chicken-run, but with a finer mesh, and there is no prettier sight in the gardens than this flower-decked cage full of peacocks, fritillaries, camberwell beauties, swallowtails, etc.

The visitor privileged to enter such a run is requested to shake his hat before leaving. Quite recently a distinguished entomologist was observed to step out of this fairly-like enclosure adorned with a prosaic bowler hat converted into a crown of glory. Quite a hundred red admirals and tortoiseshells had settled upon it during his short sojourn in butterfly-land.

Next to the butterflies the hawk moths are possibly most attractive, especially when being fed by hand with spoonfuls of syrup. The moths in a fluttering shower settle on the spoon's brim and, extending their long ribbon-like tongues, sip the draught with obvious enjoyment. The largest of all moths, the Atlas Moth, which may measure nearly a foot across the wings, is always on view in the insect house during the summer

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months. On one occasion a display of these creatures greatly impressed a bank holiday visitor, who was overheard to express gratitude for living in a country where the possibility of moths of such enormous size getting at one's clothing was precluded.

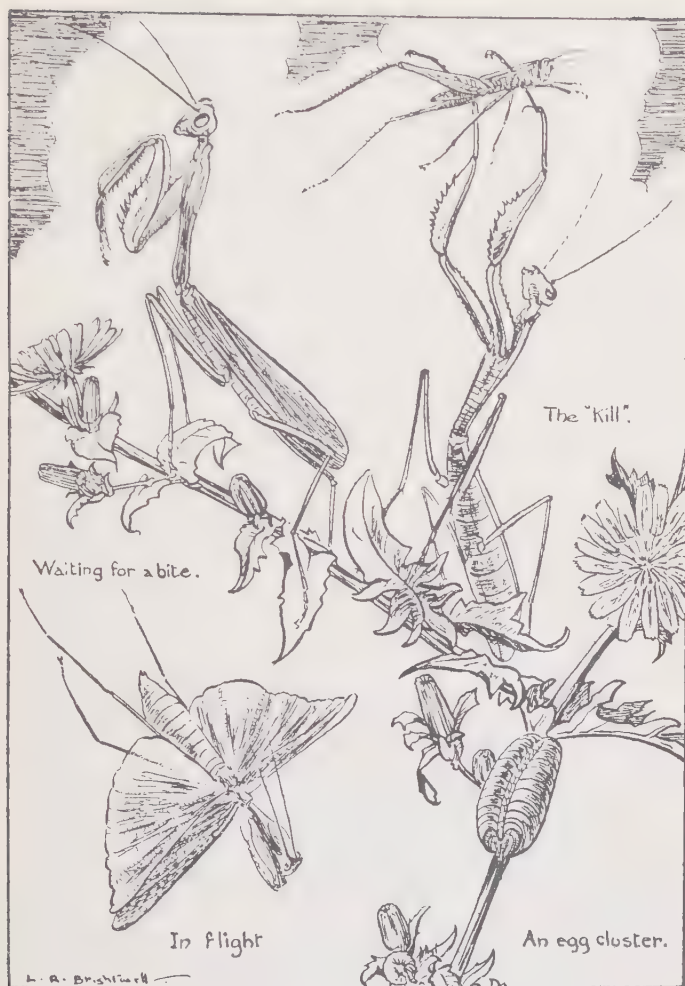
Captive butterflies and moths demand infinite care, as almost every species requires some special food plant. One kind must have its cage syringed with diluted syrup; another requires sugar mixed with mud; a third will die unless its surroundings are daily sprayed with salt water in order that it may be deluded into thinking that it is living at the seaside. Visitors may observe that some of the small trees in the cages are enclosed in sheets of muslin. The object is to keep the larvæ feeding upon them within bounds. Many of the Zoo's butterflies and moths arrive in the form of cocoons, which are kept at exactly the right degree of temperature and moisture to ensure the inhabitants emerging when required by the authorities. A certain cocoon often on view in the insect house is the size of a coco-nut and contains many scores of chrysalids. It is the work of "sociable" caterpillars who elect to go to bed *en masse*, encasing themselves in a shell or rind of dead leaves which shelters the whole community.

Those curious allies of the cockroaches known

as Stick Insects, and Leaf Insects which resemble twigs and leaves are amongst the most interesting of all the invertebrate inhabitants of the Zoo. So striking is the resemblance of the leaf insects to the leaves of the plant upon which they are placed that visitors are often to be observed searching for them in vain. In fact the cage would sometimes be regarded as empty were it not for the label drawing attention to their presence. The wings of these creatures cover the greater part of their bodies and resemble leaves not only in shade and shape but in the fact that their veins are so disposed as to form an exact reproduction of the prominent ribs present on the leaves of many plants. The colour of the insect, which is usually bright green, is due not to pigment, as in most green animals, but to a substance almost identical in its composition with the colouring matter in plants. Before death most specimens pass through the different hues of a decaying leaf. Leaf insects are vegetarians, but appear themselves to be from time to time taken in by their resemblance to leaves, for when short of food they begin nibbling pieces out of one another. The eggs which are shed on the ground—the mother making no provision for their safety, are remarkable in being so like the seeds of certain plants that experienced botanists have often been deceived by the similarity.

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Another interesting inmate of the insect house is the Praying Mantis, so named from the posture it assumes when resting on a shrub, awaiting the approach of the small insects upon which it lives. The creature when on the look-out for food rests on its two hindmost pairs of legs, with the front pair raised and clasped together as if it were engaged in an act of devotion. When the unfortunate victim alights within its reach the mantis slowly relinquishes its characteristic attitude and strikes at its prey with lightning rapidity. Having completed its meal, this insect hypocrite once more assumes an attitude of prayer. No other insect has among the superstitious such a reputation for saintliness, and in parts of Southern Europe the mantis is still regarded with reverence, it being deemed by the peasants very unlucky, if not a crime, to injure or kill one. Various species of mantis are found all over the warmer parts of the world. The Arabian species is stated by the natives to pray with its face towards Mecca. The Hottentots actually worship the creature, and should a mantis happen to alight on one of their number, the individual immediately becomes a saint. The creature is very quarrelsome and will attack its own kind on the slightest provocation, the conqueror devouring his unfortunate antagonist. To the Chinese these pugnacious habits are well-known and the insects are made to fight one another in public. The fights are



THE "PRAYING MANTIS"

held under recognized rules before large crowds and quite large sums are wagered on their results.

Another crafty Zoo boarder, who is usually accommodated in a neighbouring compartment to the mantis, is known by the name of Ant-lion. Ant-lions are the larvæ of a large fly, and dig holes in the sand, at the bottom of which they lie hidden from sight. When an ant falls into one of these pits it is immediately dragged under by the ant-lion and devoured. On occasions these unpleasant creatures throw up showers of sand to hasten the descent of their unwary victims.

Among the ants the most interesting are the leaf-cutting species, which are remarkable in that they feed on a fungus, and in order to have a constant supply of such food cut from various plants small pieces of leaf which they carry down to one of their underground chambers. There the pieces are spread out to form a bed on which the fungus soon develops. These ants in their enclosure at the Zoo may always be observed hard at work, carrying pieces of leaf to use for the cultivation of the fungus upon which they thrive.

The Zoological Society is constantly receiving interesting spiders.

The South American Trap-door Spider whose abode serves the dual purpose of excluding enemies

and keeping out the rain is a strange form. The architecture of its home consists of a long tube constructed of earth and lined with silk. The mouth of the tube is closed at each end by a door composed of earth and dead leaves, which flaps loosely over the tube and is connected to it by a hinge-like attachment. One of the doors is seldom used, and serves only as an emergency exit. On an intruder attempting to open the main entrance the spider will attempt to keep it firmly closed by holding on to it with its claws. In the rare event of an entrance being forced, however, an escape is effected through the back door. The eggs of the trap-door spider are laid in the tube, and the young when only a few weeks old leave the parental roof and go out into the world to build homes of their own.

The largest spider exhibited is the so-called Bird-Eating Spider of the West Indies, which may measure ten inches in circumference. In its native haunts the creature hides in a hollow tree by day, issuing forth at night in search of its food which consists mainly of insects. It is only occasionally that it helps itself to young birds. It is a highly poisonous creature, its fang-like mandibles being connected with a pair of large poison glands, whilst the long bristles which cover the body and limbs irritate the skin like a nettle.

Another poisonous inhabitant of the insect

house is the foot-long Giant Centipede of Trinidad. It is a repulsive-looking thing and its bite is a dangerous one for through a pair of enormous tubular fangs it pours a highly venomous fluid into the wound. Each segment of the centipede's body is provided with a pair of claws which are likewise poisonous and leave an inflammatory trail over the body of the victim. The popular name of centipede is somewhat of a misnomer, for it is a curious fact that these creatures are always provided with odd numbers of paired legs, and there are types, with forty-nine pairs and fifty-one pairs, but none with fifty pairs. Centipedes are usually regarded as unpleasant objects without any redeeming features. There exist, however, natives in South America, who extract large specimens from their burrows and having torn off their heads with the poison fangs, and the legs, proceed to devour the remainder amid obvious manifestations of pleasure.

A number of molluscs are represented in the fresh-water tanks, including some enormous pond snails known by the name of Apple Snails, which hail from all the warmer countries. They are heavy, sluggish creatures, much addicted to a sedate perambulation of the muddy floor of their aquarium. They are provided with long siphon pipes for the inhalation of air, and in the spring crawl above high-water mark and lay

their eggs upon the stems of reeds and rushes. The eggs, which resemble huge masses of caviare when first laid, are of a beautiful lilac tinge. In less than a month they turn brown, crack, open, and the infant snails, emerging, glide down the plant stems and leave the light and fresh air for a life of retirement in the mud.

A centre of attraction in the insect house is the case containing the Giant Land Crabs of West Africa. Under natural conditions these crustaceans, which are remarkable for their large protruding eyes set on long stalks, live some miles from the coast, spending most of the day under stones. They only visit the sea-shore during the breeding season, when on a certain spring day the whole of the local land crab population emigrates to the sea in which the eggs are deposited. Issuing forth from their innumerable retreats they congregate together in their millions and proceed to the coast, the males leading the way. The procession may be over a mile long and forty yards wide, and the animals travel in an absolutely straight line for their destination. No obstacle, however great, will turn them from their course, and on their way even houses are invaded. The noise of this nuptial march has been compared to the rattling produced by an army of cuirassiers. The eggs having been deposited in the sand just below high-water mark, the crabs' homeward journey to their inland retreats

commences. On their return the exhausted creatures shed their shells, and while in such a state are regarded by the natives as delicacies.

At the Zoo when these crabs are observed carrying their eggs they are transferred to the aquarium, an easy journey compared with the hazardous and wearisome voyage to the sea-side which they are compelled to undergo in their native land.

CHAPTER XIX

DE MORTUIS

IN the foregoing pages we have reviewed a variety of animals filled with the joy of life, pursuing their life-cycles in captivity with as much zest as they, or their forebears, might have done in their native wilds. But there must come a time when the wheels begin to revolve slowly and, whether man or beast, eventually stop altogether. What then? From time to time one hears of some public-spirited person bequeathing his or her body to the medical profession for dissection—and the ultimate advancement of science. The Zoo's inhabitants, denied any such control over their remains, are one and all dedicated to the sum total of zoological or medical knowledge. The dead are taken to the prosectorium, and there subjected to a searching examination by anatomists and pathologists. Every scrap of a dead animal is more or less "bespoke." After the primary analysis and the cause of death has been ascertained the body is disposed—the skin to a taxidermist or furrier, the skeleton to an

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osteologist, and the internal organs to a score of experts in hospitals, museums and private and public laboratories.

An enormous amount of time and energy is expended upon the study of the Zoo's dead.

The value of the work is not as fully appreciated as it should be by the general public, who fail to realize the fact that the more we know of the "lower animals" the better we understand our fellow men, and that every post-mortem conducted in Regent's Park is a fresh nail driven into the coffin of the arch-ogre Disease. There is a lighter side to everything, even to the last great adventure. Some time back an animal painter took away with him from the prosectorium the carcass of a huge hamadryad baboon. He acquired the remains at about the same time that a notorious and particularly revolting crime had taken place. Running across the bridge leading to Waterloo Station, he suddenly found his progress checked and himself surrounded by a number of plain-clothes policemen. A grubby but human hand was protuding from his suit case. The artist cleared his character by disclosing the baboon, but missed his last train home.



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